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# THE AMERICAN ECONOMIC REVIEW

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## PAPERS AND PROCEEDINGS

OF THE

Sixty-ninth Annual Meeting

OF THE

## AMERICAN ECONOMIC ASSOCIATION

Cleveland, Ohio, December 27-29, 1956

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Gertrude Tait, Executive Assistant

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## PROGRAM OF THE SIXTY-NINTH ANNUAL MEETING OF THE AMERICAN ECONOMIC ASSOCIATION

Cleveland, Ohio, December 27-29, 1956

The central theme of the Cleveland meeting was that of recent institutional and ideological changes in their bearing upon economic theory and policy. This represented, in some degree, a return to the central theme of the 1953 meeting, but with a somewhat different development. A conscious effort was made to distribute participation widely as between regions, universities, and age groups, with preference to members who had not appeared on prior programs.

Thursday, December 27, 1956

10:00 A.M.

Meeting of the Executive Committee

12:30 P.M.

Luncheon Meeting of the Executive Committee

2:30 P.M.

The Employment Act in the Economic Thinking of Our Times: A Symposium

Chairman: Edwin G. Nourse, Washington, D.C.
Papers: Edwin G. Nourse, Washington, D.C.; Robert A. Gordon, University of California; Peter Henle, A.F.L.-C.I.O.; George W. Terborgh, Machinery and Allied Products Institute; E. Sherman Adams, American Bankers' Association; Orris C. HERFINDAHL, Resources for the Future, Inc.

Economic Growth and Development

Chairman: LLOYD G. REYNOLDS, Yale University Papers: BERT F. HOSELITZ, JR., University of Chicago; JOSEPH J. SPENGLER, Duke University

Discussion: John M. Hunter, Michigan State University; Howard M. Teaf, Jr., Haverford College; Albert O. Hirschman, Yale University Income Distribution

Chairman: HERMAN P. MILLER, U.S. Bureau of the Census

Papers: Selma F. Goldsmith, U.S. Department of Commerce; Robert I. Lampman. University of Washington

Discussion: Howard R. Bowen, Grinnell College; George Garvy, Federal Reserve Bank of New York; Henry C. Taylor, Washington, D.C.

Keynesian Economics after Twenty Years

Chairman: ALBERT B. WOLFE, Onio State University

Papers: WILLIAM J. FELLNER, Yale University; DUDLEY DILLARD, University of Maryland

Discussion: DAVID McCord WRIGHT, McGill University; WILLIAM A. SALANT. Brandeis

University; TIBOR SCITOVSKY, Stanford University

Government Taxing and Spending: Developments of the Last Decades and Current

Chairman: C. WARD MACY, University of Oregon

Papers: CARL S. SHOUP, Columbia University; JESSE V. BURKHEAD, Syracuse University Discussion: JOHN F. DUE, University of Illinois; LOWELL D. ASHBY, University of North Carolina; EARL C. CROCKETT, University of Colorado

Friday, December 28, 1956

9:00 A.M.

:

Institutional Economics

Chairman: CLARENCE E. AYRES, University of Texas

Paper: KENNETH E. BOULDING, University of Michigan

Discussion: Allen G. Gruchy, University of Maryland; Forest G. Hill, University of California; Frank H. Knight, University of Chicago; Kenneth H. Parsons, University of Wisconsin

Transportation Problems

Chairman: James C. Nelson, State College of Washington

Papers: Dudley F. Pegrum, University of California at Los Angeles; Kent T. Heavy,
Yale University; Charles L. Dearing, Illinois State Toll Highway Commission

Discussion: John W. Barriger, Pittsburgh & Lake Erie Railroad; Merrill J. Rob-

ERTS, Michigan State University

Business Fluctuations and Inflation

Chairman: ARTHUR R. UPGREN, Dartmouth College

Papers: ROY L. REIERSON, Bankers Trust Company of New York; RUTH P. MACK. National Bureau of Economic Research

Discussion: Edwin B. George, Dun & Bradstreet; John P. Lewis, Indiana University: T. M. STANBACK, New York University

### 12:30 P.M.

Ioint Luncheon with the American Finance Association

Chairman: R. MILLER UPTON, Beloit College

Address: Donald S. Thompson, Federal Reserve Bank of Cleveland

The Monopoly Problem as Seen by Social Scientists

Chairman: GEORGE W. STOCKING, Vanderbilt University

Papers: EDWARD H. LEVI, University of Chicago; EARL LATHAM, Amherst College; Čarl Kaysen, Harvard University

Discussion: Corwin D. Edwards, University of Chicago; Ward S. Bowman, Jr., Yale University; CHARLES E. LINDBLOM, Yale University

Price and Competitive Aspects of the Distributive Trades

Chairman: THEODORE N. BECKMAN, Ohio State University

Papers: STANLEY C. HOLLANDER, University of Pennsylvania; Morris A. Adelman, Massachusetts Institute of Technology; RICEARD B. HEFLEBOWER, Northwestern University

Discussion: Henry D. Ostberg, New York University; Wallace O. Yoder, Indiana University; F. E. Balderston, University of California

Social Security and Welfare
Chairman: John W. McConnell, Cornell University

Papers: J. Douglas Brown, Princeton University; Ida C. Merriam, Social Security Administration

Discussion: Taulman A. Miller, Indiana University; Henry W. Steinhaus, Equitable Life Assurance Society; JOHN P. HENDERSON, University of Pittsburgh

## 8:00 P.M.

Presidential Address

Chairman: CALVIN BRYCE HOOVER, Duke University Address: EDWIN E. WITTE, University of Wisconsin

Saturday, December 29, 1956

## 9:00 A.M.

The Impact of Some New Developments in Economic Theory: Exposition and Evaluation

Chairman: G. LEE BACH, Carnegie Institute of Technology

Papers: TJALLING C. KOOPMANS, Yale University; HEREERT A. SIMON, Carnegie In- . stitute of Technology

Discussion: Sidney Weintraub, University of Pennsylvania; James S. Earley, University of Wisconsin; John R. Meyer, Harvard University

Power and Public Utility Problems

Chairman: Eli W. Clemens, University of Maryland

Papers: JAMES C. BONBRIGHT, Columbia University; MARTIN G. GLAESER, University of Wisconsin

Discussion: EMERY TROXEL, Wayne University; FRED P. MORRISSEY, University of California; James K. Hall, University of Washington; E. W. MoreHouse, General Public Utilities Corporation of New York

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2 No manuscript received.

Consumers in the American Economy

Chairman: MARGARET G. REID, University of Chicago

Papers: IRVING B. KRAVIS and IRWIN FRIEND, University of Pennsylvania; WARREN J. BILKEY. University of Connecticut

Discussion: Persia Campeell, New York State Consumers' Counsel; Alfred R. Oxen-peldt, Columbia University; Eva C. Mueller, University of Michigan

International Economics

Chairman: WYTZE GORTER, University of California at Los Angeles

Papers: W. A. Lewis, University of Manchester; Frank W. Fetter, Northwestern University: Frank A. Knox, Oueen's University

Discussion: R. E. Slesinger, University of Pittsburgh; H. Austin Peck, University of Maine

### 2:00 P.M.

Developments in Banking and Monetary Policy (Joint session with the American Finance Association)

Chairman: ELMER WOOD, University of Missouri

Papers: JOHN DEUTSCH, University of British Columbia; WALTER A. MORTON, University of Wisconsin

Discussion: BERNARD W. DEMPSEY, Marquette University; KARL R. BOPP, Federal Reserve Bank of Philadelphia: SAMUEL I. KATZ, Board of Governors of the Federal Reserve System

## 2:30 P.M.

Economics and Changing Technology Chairman: JOHN LINTNER, Harvard University

Papers: YALE BROZEN, Northwestern University; RICHARD A. TYBOUT, Ohio State University; Mordecai Ézekiel, Food and Agriculture Organization

Discussion: ARTHUR KEMP, Claremont Men's College; CARROLL L. CHRISTENSON, Indiana University; Solomon Barkin, Textile Workers Union of America

Soviet Economic Developments

· Chairman: ABRAM BERGSON, Harvard University

Papers: G. WARREN NUTTER, University of Virginia; DAVID GRANICK, Fisk University Discussion: Gregory Grossman, University of California; Wolfgang F. Stolper, University of Michigan; Holland Hunter, Haverford College

Economics in the Schools

Chairman: ROY BLOUGH, Columbia University

Papers: BEN W. LEWIS, Oberlin College; CLARK C. BLOOM, State University of Iowa Discussion: Meno Lovenstein, Ohio State University; LLOYD F. PIERCE, Tennessee State College; BENJAMIN A. ROGGE, Wabash College

5:00 P.M.

Business Meeting

6:00 P.M.

Dinner Meeting of the Executive Committee

THE purpose of the American Economic Association, according to its charter, is the encouragement of economic research, the issue of publications on economic subjects, and the encouragement of perfect freedom of economic discussion. The Association as such takes no partisan attitude, nor does it commit its members to any position on practical economic questions. It is the organ of no party, sect, or institution. Persons of all shades of economic opinion are found among its members, and widely different issues are given a hearing in its annual meetings and through its publications. The Association, therefore, assumes no responsibility for the opinions expressed by those who participate in its meetings. Needless to say, the papers presented are the personal opinions of the authors and do not commit the organizations or institutions with which they are associated.

JAMES WASHINGTON BELL Secretary

## INSTITUTIONAL ECONOMICS A NEW LOOK AT INSTITUTIONALISM

By Kenneth E. Boulding University of Michigan

Institutionalism, as the term is narrowly understood, refers to a movement in American economic thought associated with such names as Thorstein Veblen, John R. Commons, and Wesley Mitchell, which flourished from the 1890's to the 1920's. It is essentially a movement of dissent and has a certain atmosphere of sectarianism which seems to be an unavoidable concomitant of dissent. It is not a movement, moreover, which has succeeded in creating an "establishment"; there are a few economists today who would call themselves institutionalists, but these tend to be isolated individuals, and there is not today anything which would be called either an institutionalist "movement" in economics nor even an institutionalist group.

Looking at institutionalism in 1956, therefore, one is tempted to \*regard it as a historical interlude—an interlude, it is true, of considerable interest, and one which made real, if small, contributions to the main stream of economic thought, and one which will attract the interest of historians of thought, but an interlude nevertheless which ended for all practical purposes in the thirties. In a narrow sense this judgment might be justified. Nevertheless, we miss the larger and continuing significance of institutionalism if we do not see it as a particular manifestation of a much broader movement of economic dissent. There is no single name for this broad movement, and perhaps it is too broad to deserve one. It has, however, a certain unity amid the manifoldness, derived perhaps from the circumstance that while there are innumerable varieties of dissent, they all dissent from much the same "establishment" or orthodoxy. The picture is complicated by the existence of two separate, though related, things from which the dissenters dissent. One is the orthodoxy of economic thought as represented by classical and academic economics. The other is the economic institutions themselves, or the customs, habits, and motivations of the people who operate them. The dissent from the orthodoxy of economic thought may be in part scientific dissent, arising from the belief that the orthodox doctrines are unrealistic or inadequate tools for the understanding of the "facts" of economic life. The dissent is in part, however, moral dissent arising from the belief that orthodox economics is the defender of

ethically undesirable institutions. In this case the dissent comes from dissatisfaction with the institutions which orthodox economics interprets rather than with the interpretation itself.

We are much in need of a general sociology of dissent. The phenomena of dissent show strong parallels in many different fields-in religion, in economics, in art, in philosophy, and in fact in almost every aspect of human life and thought. The puzzling thing is, first, why do certain viewpoints or streams of development establish themselves as orthodox, or "main streams," and, second, why do dissenters perceive themselves as dissenters: that is, as not belonging to a main stream of orthodoxy? Much of the social and psychological characteristics of dissent arise from this self-perception of the dissenter as a dissenter the shrillness, the pugnacity, the asceticism. There is a fundamental distinction perhaps between the challenger and the dissenter. The challenger sets out to create a new orthodoxy; the dissenter cannot really bear the loss of something to dissent from, and hence would not really want to destroy that from which he dissents even if he could. In economics one thinks of Adam Smith as the type of the challenger—one who disagreed profoundly with existing orthodoxies but who sought, on the whole successfully, to overthrow these and establish an orthodoxy of his own. By contrast, Veblen is the type of the dissenter of the sourest kind, whose weapons are irony and sarcasm and sardonic innuendo, but who both in his personal life and in his thought almost deliberately brings his own house down on his head in the process of general destructiveness.

If we may allow ourselves the luxury of a fanciful image, we may think of the history of thought as consisting of a main stream of orthodoxy, transmitting—and, of course, in the process of transmitting, modifying—a line of thought and a general image of the world from generation to generation. In or close to the bed of this stream from time to time rise the challengers, who pour new ideas into it, often changing its course. Running out from it—especially in the delta regions where the stream is sluggish—are the side streams of dissent, running in different directions from the main stream but essentially deriving their water from it. Sometimes these streams of dissent peter out in the desert; sometimes they turn back into the main stream; sometimes a challenger arises who diverts the main stream to join one of the dissenting channels. Thus underconsumptionism goes off from the main stream as dissent in the person of Malthus; it flows in this side channel for a hundred years (Sismondi, Marx, Hobson, etc.) until Keynes (a challenger) turns the main stream to join it. This is why dissent should never be underestimated, and why also the significance of dissent is always hard to estimate, because its true significance may be found in the future. Many of the channels of dissent do waste away in the desert; others prepare the way for a new turn in the main stream; and we can never be sure which is going to be which. I shall argue in this paper that American institutionalism is, or was, such a side stream of dissent, but that nevertheless it may have gouged channels in a direction which the main stream will one day followand in part is following-so that its significance may be far beyond its apparent magnitude.

Before I discuss the American institutionalists, however, let me cast a brief glance around the world to look at other similar movements in other times and places, so that we may see the Americans not as an isolated phenomenon but as part of a much larger movement of dissent with which, indeed, they had many contacts. Wesley Mitchell<sup>1</sup> claimed Richard Jones, a somewhat obscure contemporary of Ricardo, as perhaps the first institutionalist, though if we make the term vague enough Sir William Petty has a good claim to this somewhat dubious honor. Whatever its origin, we can trace a steady and rising stream of dissent in Britain through the nineteenth into the early twentieth century, beginning with Robert Owen, the Utopian Socialists, and even perhaps Malthus, rising to a crescendo at the end of the nineteenth and the beginning of the twentieth centuries in Beatrice and Sidney Webb and the Fabians, in a group which might be called the "London School Institutionalists" because of their center in the newly established London School of Economics (R. H. Tawney, Graham Wallas, Harold Laski), in a few gifted amateurs and mavericks such as I. A. Hobson-(who might, however, almost be placed in the London School group), and finally in a group of quite sober and respectable academic institutionalists such as H. A. Marquand and Sargeant Florence, operating mainly in the provincial universities. The Oxford antimarginalists such as P. S. Andrews might be included in the list. The antimarginalist revolt, however, is perhaps another, though not unrelated, story.

In all this movement, the Webbs stand out, not only because of their immense energy and erudition, but also because of their very great influence. A good case can be made for the proposition that the Webbs were the greatest internal influence on British history for the first half of the twentieth century—that the vision of the future which they conceived in their studies and disseminated through the Fabian Society and the Labour Party patterned the whole course of British economic policy for two generations into the form of a gradual movement towards the Webbian Paradise of the Social Democratic State. The

<sup>&</sup>lt;sup>1</sup> The Trend of Economics, ed. R. G. Tugwell (New York, 1924), p. 17.

<sup>2</sup> The enigmatic figure of Malthus almost requires a category of its own—that of the "unsuccessful challenger"!

Webbs were not primarily theoreticians, though when occasion demanded (as in their great work, *Industrial Democracy*) they could show deep insights which their deficient analytical apparatus did not permit them to unfold into a system. They were, however, great observers, great recorders of the intricacies of institutional structure—in labor unions, in co-operatives, in local government—and they were, what is more important, prophets—pedantic prophets, perhaps, but still with sufficient prophetic charisma to shape the future.

Corresponding to this movement in England is a similar but related movement in Germany. The German Historical School-with which. I must confess. I am familiar only through the histories of thought—is clearly part of the movement. Marx is a monumental and portentous part of it, not so much German as universal. There are aspects of the challenger about him, and in a sense he can certainly be said to have founded a new orthodoxy. Nevertheless, it was then-and it still isa strange, heterodox, "Protestant" orthodoxy. Marx always remains deeply, emotionally committed to the capitalism he wished to overthrow. His analysis, right or wrong, is an analysis of capitalism, not of socialism. There is a certain truth in the paradoxical remark that Marxism is the theory of capitalism, orthodox economics of socialism. His personal life exhibited many of the trauma of dissent—combativeness, suspicion, bitterness, as well as a certain nobility in suffering and tenderness in family life. In a sense he stands apart from the common run of economic dissenters; yet he is a powerful influence on all who succeeded him, and one certainly could not write a history of economic dissent without him. The "lesser Marxists" I pass over; they require a whole history to themselves. Two other names, however, stand out in the German record. Max Weber is a figure intellectually as monumental as Marx, and here again one hesitates to classify him with the dissenters. Here is rather a somewhat isolated and remote fountain of productive ideas, building out of personal weakness a triumphant edifice of the mind, illuminating whole areas of history and large fields of social science with wise and penetrating insights. Here again, however, the main stream of economics is not so much attacked as simply bypassed in favor of a larger frame of reference and a more general, more vague, but more dynamic set of ideas and interpretations.

Finally among the Germans one must mention the name of Werner Sombart, a twisted genius, no doubt, but a genius for all that, and again a dissenter of broad scope and wide range, who ended up in that last nightmare of dissent—dissent against life itself, against elemental human decency: the National Socialist movement.

<sup>\*</sup>Beatrice perhaps was the prophet, Sidney the pedant. In any case it was a unique combination.

I must confess that I know less about the similar movements in France and Italy and nothing at all about possible like movements of thought in other countries outside of the United States. Two names, however, stand out: Durkheim in France and Pareto, who, I suppose. one should regard as an Italian. These men are not quite dissenters in the British or American sense. Insofar as they both did work in economic sociology, however, they contributed to that broadening of the outlook of economics which is itself an implicit criticism of the narrowness of "main stream" economic theory. Pareto, of course, was a very important contributor to the main stream in his Cours and Manuale. The Pareto of Mind and Society, however, is a different man from his vounger self—the man who comes to dissent in later life rather than in the hasty fires of youth. In a sense, Georg Simmel, the German, stands in the same category as Pareto and Durkheim. Perhaps one should not include these men with the others; nevertheless, in a seminar designed to acquaint students with the hinterlands, underworlds, and far-flung territories of economics, these men could hardly be neglected.

This brief survey is in no sense exhaustive. It indicates, however, that the American institutionalists to which we now turn are not an isolated phenomenon but are part—and an important part—of a world-wide intellectual movement. This is not to deny, of course, the original and local character of American institutionalism; it was inspired much more by American conditions and by the original and creative minds of its leading figures than by intellectual influences from abroad. These same leading figures, however—especially Veblen, Commons, and Mitchell—were not parochial in their reading and outlook and were clearly aware of similar movements taking place in other countries.

There are rumbles of dissent in mid-nineteenth-century American economics—Henry Carey, for instance. The first real American revolution against economic orthodoxy came from a group which flourished in the last two decades of the nineteenth century who might be called the "pre-institutionalists." I have sometimes called them the "turn-of-the-century rebels," though their rebellion was of a very mild order. Richard Ely, Simon Patten, and Henry Carter Adams are the names that spring most readily to mind. Their rebellion was of a gentle, Christian-socialist variety which could hardly have fluttered many dovecotes in the vested interests; it was enough, however, to get Henry Carter Adams dismissed from Cornell, and it created enough organizational steam to get the American Economic Association started, for which, I am sure, we should be grateful.

We now come to the great triumvirate: Veblen, Commons, and Mitchell. These men, both in regard to their influence and their personal stature, stand far above their contemporaries in dissent, and they may be taken as the best representatives of the school. Of the three, Commons is the isolate—and to my mind probably the most important and influential of the three in the long run. It is curious that neither Veblen nor Mitchell seem to have known Commons, though it is hard to believe that they did not have at least a casual contact. Mitchell and Veblen, of course, knew each other well, though they were men of remarkably different character and contribution.

Veblen is the legendary character of the three—the one about whom most books have been written, and will probably continue to be written, and whose life and personal character continue to attract attention even out of proportion to the importance of his ideas. It might almost be said that he became a legend in his own lifetime, and a symbol of the unhappy, frustrated, wandering, dissenting intellectual, rejected by the society which he himself rejects, and yet insulted by this rejection, denied the recognition which his gifts seem to deserve, driven from post to post by trivial scandals, finally descending to a bitter and lonely old age, living on the charity of his friends in a last agony of humiliation and defeat. The power of Veblen cannot be understood until we see that his life has something of the marks of a Passion-not to be compared, of course, with that of Husein and still less with that of Jesus, but still he was despised and rejected of men, a man of sorrows and acquainted with grief. The fact that his sorrows were largely of his own making is beside the point; he became a symbol of the rejected intellectual, beaten down by the Caiaphas' of the University and the Pontius Pilates of industry. It is curious that there is no real equivalent of Veblen among the British dissenters. In his wit and command of language, he reminds us of Bernard Shaw. Shaw's difficulty, however, was that the world obstinately refused to crucify him in spite of his constant invitation to it to do so: the more he rejected the world, the more it accepted him. This is a dirty trick for the world to play on a prophet; it may be, however, a result of the fact that Shaw was a dramatist and hence was allowed a license which was denied to Veblen as a mere writer of supposedly academic books. The stage has always had a license to be licentious. In point of suffering and rejection, Veblen's English counterpart is J. A. Hobson. Hobson, however, did not have Veblen's picturesqueness, nor his wit, nor his weaknesses of character, and so is less fitted to become a symbol.

Mitchell is a man of a very different stripe—an economic entomolo-

<sup>\*</sup>Some would probably include J. M. Clark in this group: I would certainly regard him as a star of the same order of magnitude. I am hesitant, however, to classify him with the institutionalists because he is much less of a dissenter than the others and much closer to the main stream.

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gist, collecting time series as if they were butterflies, and even transfixing them with the pin of a trend line. Somewhat austere, though capable of inspiring warm affection and devotion, his personal character was as impeccable as Veblen's was dubious. His institutionalism runs not into the description and understanding of institutions as such but into the collection of immense masses of statistical data, mainly in the form of time series, and the taxonomic analysis of these series by an elaborate statistical ritual. (It would be entertaining to apply the Veblenian acid to the massive intellectual routine of the National Bureau.) He exhibits the dissenter's hostility to traditional theory, and his own theoretical structure remains implicit rather than overt. Nevertheless, it exists and can be extracted without too much difficulty. As theory, however, it bears the marks of the gifted amateur; it is not a development from established doctrine, or even a rebellion from it, but something built up, rather haphazardly, almost ab ovo.

John R. Commons is again a unique person, very different from either Mitchell or Veblen. If one seeks for a British analogue, one finds it immediately in the Webbs-perhaps more in Sidney Webb-if only Commons had had a Beatrice! Just as the Webbs wrote the future history of England, so through his students Commons was the intellectual origin of the New Deal, of labor legislation, of social security, of the whole movement in this country towards a welfare state. The history of the Commons influence still remains to be written. He does not attract the personal interest of Veblen or even of Mitchell, but one runs across his students everywhere, both in universities and in government. He was the first brain truster—operating, it is true, only for the most part on the narrow stage of the Wisconsin State government, but setting a pattern of great importance for the next generation. He had the remarkable capacity of inspiring a whole generation of students, hardly any of whom understood 10 per cent of what he was talking about. His theoretical writing is obscure and cumbersome; on occasion, however, he could write brilliantly, as in his early labor studies and in his sensitive autobiography, Myself, a book which should be much more widely read.

When one looks at the successors of these three men—the large numbers who were influenced by them—the record is impressive, yet curiously spotty. The influence of Veblen, ironically enough, has been felt most in a field which he thoroughly despised—the law. The "new realist" school of legal-economic thinkers as represented, for instance, by R. L. Hale, Thurman Arnold, and so on owes a great deal to Veblen and admit it publicly. The engineers whom he thought of so highly have treated him with a fine workmanlike neglect, with the dubious exception of the Technocrats. To the main stream of academic life he

contributed a few scattered disciples, but not much else; current textbooks in economics pay no attention to him, or dismiss him by quoting one or two of his gemlike phrases. Mitchell, in a sense, left a vast intellectual progeny in the national income statisticians and the econometricians, who owe very little to his work but a good deal to his spirit. The pioneering work of the National Bureau on national income statistics in the twenties, for which special credit must be given to Simon Kuznets, ushered in a revolution in the economic information system as profound in some ways as the revolution in astronomy caused by the telescope. Mitchell also, however, made only a small impact on academic economics. Commons again left an influential group of disciples. Their influence is felt, however, in labor economics, in social security, in public utility economics, in New Deal legislation and administration, not in basic theory. Commons' theoretical structure remains today exactly where he left it: a tangled jungle of profound insights, culled by an essentially nontheoretical mind from a life rich with experience of economic realities. No disciple has taken it up, or even ventured to interpret it, for the lay public. Books about Veblen appear every year; Mitchell inspires festschrifts and memorial volumes: Commons gathers dust on the shelves. The future. I venture to predict, will reverse this order.

It is preposterous, of course, to try to do this kind of "Cook's Tour" of economic dissent in the space of an article as short as this. I have given you a string of names and even at that have left many important names off the list. I have done this, however inadequate as it may be, to try to give some indication of the breadth and scope of the movement. Now, having no reputation left to lose, I shall attempt an even more absurd task: to try to sum up in five pages what these hundred-and-one dissenters said. We have glanced at the dissenters, but what is the content of their dissent? I shall confine myself mainly to intellectual dissent—dissent, that is, from the main stream of analytical ideas, though at times this is almost inseparable from the moral dissent, from the prevailing economic system itself, especially where there is a feeling that the orthodox economists are apologists for the status quo (lackeys of Wall Street!).

I shall distinguish three prime sources of discontent. At the level of abstraction of economic theory itself, there is discontent with the static character of the models and a demand for dynamics. Then there is discontent with the level of abstraction at which economics mostly conducts itself and a demand for integration with other social sciences—for models which bring into play more explicit, and more accurate, psychological and sociological variables. Finally there is discontent with the empirical feedbacks into economic theory and a demand for

accurate empirical work and for theories which guide and are in their turn guided by careful and detailed empirical observation rather than by the "casual empiricism" which characterized classical and even neoclassical economics.

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There is no smoke without fire, and each of these sources of dissent is fed by legitimate dissatisfactions. Even today the great bulk of what is taught under the name of economic theory is statics or comparative statics. I am prepared to defend this—and have defended it on the ground that it does lead to some useful elementary propositions at about the level of household wisdom: if we touch a hot stove we will burn our fingers, if we fix prices "too high" we shall have surpluses, if we cannot absorb the capacity output we shall have unemployment, and so on. From Veblen-though in a glass darkly, for he was constitutionally averse to clear constructions—comes a penetrating criticism of neoclassical price theory: that it regards the "normal" price system as passive, determined by the underlying utility and production functions, whereas in any dynamic system we must recognize that preferences and techniques adjust to the price set, just as much if not more than the price set is adjusted to preferences and techniques. If a price is "above normal," it may be that the growth of surpluses will eventually force the price down, as in the Walras-Hicks economics, or if the production of a particular commodity is below normal, the excessive profitability of its production will force an expansion, as in the Adam Smith-Marshall economics. But it may be, also, that a disequilibrium price leads to the adjustment of the supply and demand curves—or of their progenitors, the preference and production functions—through the dynamic process. This criticism is not really one of the equilibrium concept as a tool of analysis: it is a criticism of the implicit dynamics behind the orthodox price theory and it is a criticism of much force.

Apart from this one contribution, the positive contributions of economic dissent to dynamic theory are meager. Such dynamic theory as we have comes from Samuelson and the Swedes—none of them true dissenters. From Marx we get a cloudy eschatological dynamic as magnificent as that of the classical economists, which suffers under the disability of being such a fantastic special case that its predictions have been largely falsified. From the Germans we get the famous "stages of development"—about as useful as Veblen's "instincts." From Mitchell we get purely empirical leads and lags—the trouble with old lags being that they have a chronic tendency to reform. From Veblen we get exhortations and evolution, with even less content than evolutionary theory had in Herbert Spencer. Commons' theoretical structure is no more dynamic than Marshall's. One need only read a deplorable article by Commons in the *Encyclopaedia of the Social* 

Sciences on the price level, in which he predicts cheerfully, as of about 1931, that the price level will continue to fall until 1952, after which it will rise again, to see how little real dynamics he had in his thinking.

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The second source of discontent with economics—the need for integration towards other social sciences—is again one for which I have much personal sympathy. The basic abstraction of economics is the commodity; its basic concept the transformation of commodities through exchange, production, or consumption. People, on the whole, can be neglected, especially if their behavior is regular enough. For some purposes this is fine; for others it will not do. There must be "interstitial disciplines"—political economy, economic sociology, economic psychology, economic anthropology, and a spectrum of theoretical structures which covers them. Especially is this true when we come to prescription; if we are to prescribe for society we must see it as a whole, not as an abstraction. Here I think the basic difficulty of the dissenters is that up to the present the other social sciences have not been at the same level of development as economics and the attempts at integration have consequently been premature. Marx is one such attempt, and it breaks down in an inadequate anatomy of power and an inadequate view of human nature. In Max Weber we see what is perhaps a more successful integration. Here sociology, at least, is drawn into a rather consistent interpretation of economic history, but even Max Weber suffers from inadequate theories of individual behavior. In Veblen we see a rather grandiose out at the same time ramshackle attempt to draw widely on psychology, sociology, and anthropology in the search for interpretations of economic life—but he draws on an instinct psychology, a racist anthropology, a mechanistic biology, and an analogical sociology, and the result while an admirable medium for preaching (disguised as objective science) is hardly a durable system. In Commons I would argue that we see the most successful attempt to enlarge the borders of the economic abstraction, not so much, however, by drawing in contributions from other social sciences as by the generalization of concepts originally derived from economics. Thus his idea of the transaction is a generalization from the concept of exchange: his idea of the "going concern" is a generalization of the concept of the firm; his concept of "working rules" is a generalization from the notion of economic behavior. None of these concepts derives much from other social sciences; and while Commons always seems to stop short of building his conceptual framework into an orderly scheme, he foreshadows much that is happening today in the theory of organization and behavior. Mitchell was not, I think, much interested in this aspect of dissent.

An important aspect of the desire for a broader and more social-sci-

entific economics is the dissatisfaction with the apparent psychological assumptions of economics—its atomism, its hedonism, its mechanomorphism, and its apparent insistence on "low" pecuniary motives. Some of this dissatisfaction arises out of a misunderstanding of the level of abstraction and formalism at which economic theory operates. Nevertheless, there is always hope that psychology and economics might contribute something to each other. Veblen's "atomic globule of desire" is no doubt very unsatisfactory, but at least it is a workable abstraction, for which the "instinct of workmanship" and the "parental bent" are very poor substitutes.

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The third source of discontent—remoteness from a continuing process of observation of actual phenomena—is again one with which one must heartily sympathize. It is not that the classical or neoclassical economists did not observe the economic life around them—some, indeed, like Ricardo, were participant observers in at least some important aspects of economic life. Their observations, however, were casual, and once having built up a theory they tended to modify their image of reality to conform with the theory rather than to allow observation to modify both the image and the theory. Marx read government reports in the British Museum, the Webbs poured over documents and even sent people out to ask questions, Commons observes unions from within, Mitchell collected figures, and only Veblen followed the method of casual—if acute—observation and rash generalization which he denounces.

To appraise in a paragraph a movement as broad and significant as the one I have described would be presumptuous. I shall conclude, however, with something of a personal confession. In my student days I conceived an almost violent prejudice against institutionalism derived mainly from reading a volume of essays edited by R. G. Tugwell. called The Trend of Economics (Knopf, 1924), which was supposed to be something of a manifesto of the "Young Turks" of the school. On returning to it recently. I must confess that even on second reading it is not a work I would recommend: some of the essays are at least pleasant and innocuous; one of them I would still regard as the worst piece of writing on economic subjects I have ever encountered. It seemed to me in my student days, then, that institutionalism offered nothing to a rising young economist but bad writing, or bad temper, or both, and a kind of snarling, sniping radicalism which held no creative promise for the future. This judgment I now see as much too severe. The direct impact of institutionalism on the main stream of economic thought has been small. It was Keynes, not Mitchell or Commons or Veblen, who swept my student generation into a new line of thought and into a new, creative hope for the world. Nevertheless, the indirect influence of institutionalism has been very great. In the past thirty or forty years, there has been an extraordinary charge in the "style" of American, and of most Western, societies. This is symbolized most clearly in our architecture—compare the spare, stripped, buildings of today with the lush fantasies even of the twenties. Some of this—it is impossible to say how much—is due to Veblen's acid phrases. I cannot resist the temptation to parody Swinburne:

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Thou hast conquered, thou wry Minnesotan, The world has grown grey with thy breath The frills that we once used to dote on Are done to a functional death.

In more academic matters I think we must say that the sources of dissent were all valid and are still valid. The institutionalists may not have given the right answers, but they did ask some very right questions. We do need dynamics; we do need integration with other social sciences; we do need empirical feedback. And these are precisely the areas where vital work continues to be done in economics—mostly by people who have never given any thought to the institutionalists and who in no sense regard themselves as their disciples.

In a letter to me a few months ago, Professor Ayres accused me of having become an institutionalist. If a somewhat despairing concern for dynamics in theory (without losing a sense of the very real accomplishments of statics); if a very strong concern for integration in the social sciences and for the bringing of contributions from psychology, sociology, and the biological sciences into the construction of better theories of individual behavior and social change; if a strong (if skeptical) interest and sympathy with empirical methods is enough to make me an institutionalist, then I gladly accept the title. In the work of the National Bureau, the Cowles Foundation, and the Survey Research Center; in cybernetics, operations research, general systems theory, organization theory, even in the humble contributions of a few economic theorists and in many other places, one detects the ground swell of a "movement." If anybody wants to call this "neo-institutionalism," I shall only complain the word is too long.

## DISCUSSION

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ALLAN G. GRUCHY: Professor Boulding's new look at institutionalism gives rise to a combined moralistic, verbal, and scientific attack on this type of economics. Since his moralistic and verbal onslaughts on the institutionalists turn out to be moralizing and preachment rather than scientific analysis, I shall dismiss these onslaughts as being quite irrelevant to our main concern, which is a scientific appraisal of institutionalism. Boulding's scientific appraisal of institutional economics is defective on two main counts. First, he incorrectly defines institutionalism as "the description and understanding of institutions." Using this omnibus definition, he can classify any social scientist who studies institutions as an institutionalist. This is why he includes William Petty, Robert Owen, Graham Wallas, Harold Laski, Emile Durkheim, and many other social scientists in his grab-bag of institutionalism. The correct definition of institutionalism is that this type of economics is a study of the disposal of scarce means within the framework of our developing economic system. It rounds out economic science by providing a theory of the going economic system, or, in other words, a theory of capitalism. Institutionalists study institutions only as subsidiary parts of a larger matrix in the form of the economic order. If Boulding wishes to make a significant analysis of institutionalism, he should first elucidate the theoretical position of the institutionalists as it is revealed in their theory of the American capitalistic system. In a very real sense he has not made contact with institutionalism, because he has no interest in what is of prime importance to the institutionalists; namely, a theory of capitalism.

The second criticism of Boulding's look at institutionalism relates to the main thesis of his paper, which is that institutionalism is essentially or primarily a movement of dissent from basic economic theory. According to Boulding, institutionalism is only a particular manifestation of a much broader movement of dissent which goes far beyond institutionalism, so far indeed that it can be said to include even Boulding himself. This view of institutionalism is not supported by an examination of the nature and the history of the movement. Institutionalism is only secondarily a movement of dissent from analytical economics. What Boulding has failed to grasp is that institutionalism is primarily a positive, creative movement which aims at broadening the nature and scope of economic science by pushing beyond basic theory to create a theory of our developing economic system.

As anyone knows who has taken the time to read and digest the very extensive body of institutionalist writings, the great bulk of this material has nothing at all to do with dissent from analytical economics. Veblen's Theory of Business Enterprise, Absentee Ownership, and Vested Interests and the Common Man, Mitchell's essays on the role of money, the theory of consumption, and his theory of economic guidance, Clark's Studies in the Economics of Overhead Costs, Social Control of Business, and Guideposts in Time of

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Change, and Gardiner Means's The Modern Corporation and Private Property and The Modern Economy in Action have nothing to do with dissent from received economic theory. The economic interpretations in these and other writings of the institutionalists are the pieces with which they have constructed their mosaic of the American capitalistic system. Out of these volumes has emerged the essence of institutionalism; namely, a theory of the American economic system. If criticism of institutionalism is to be significant and relevant, it must inquire into the real core of this type of economic thought and analyze the theory of capitalism which institutionalism has added to the body of pure theory. One may not agree with the institutionalists' theory of the American economic system, but he misses the mark rather completely if he fails to understand that this theory is the very essence and primary concern of institutionalism.

The institutionalists' totalistic concept of the economic system is not the same as Boulding's over-all concept. Whereas he analyzes the economic system in terms of an elaborate, highly abstract mathematical model, the institutionalists study the economic system in terms of a concrete, historical type of economic activity by means of which scarce resources are allocated. While Boulding's view of the economic system is useful as a first approximation to an understanding of economic reality, the institutionalists' view of the economic system is necessary for a full interpretation of the flow of concrete economic events.

The institutionalists do not repudiate or dispense with pure or basic economic theory. What they have done over the years is to take the basic theory of Marshall, Keynes, and others and place it in the larger setting of a theory of the evolving economic system. We see recent statements of this theory of the total economic system in I. M. Clark's Guideposts in Time of Change, in the annual reports of the Council of Economic Advisers for the years 1946-53 which develop the concept of an American doctrine of mutual adjustment between the economy's private and public sectors, and also in the publications of the National Planning Association such as The American Economy in 1960. The institutionalist theory of capitalism runs in terms of the continued march towards industrialization, the spread of collective action in control of individual action, the growing inability of the free market system to remove automatically discrepancies between the nation's income and product flows, the development of imbalances between prices and costs and between savings and investment, and the expansion of government action to reduce these discrepancies and imbalances.

Theories of the total economic system are very important because men work and live with them. These theories bridge the gulf between basic economic theory and economic policy recommendations. For example, Keynes placed his basic theory of national income determination in the framework of his theory of British capitalism when he came to make his policy recommendations. Likewise, the institutionalists use their theory of capitalism as a spring-board for the recommendation of economic policies.

To say that institutionalism is nothing more than a past historical interlude, or at best a negativistic movement of dissent, indicates only wishful thinking. Recent and current economic trends in this country and elsewhere are the surest guarantee that institutionalism will continue to be a significant and, in some quarters, a thriving movement. The Employment Act of 1946 calls for an integrated, holistic attack on the nation's economic problems. But before such an attack can be made successfully, we must have an adequate over-all interpretation of the functioning of our mixed enterprise system. Since the institutionalist movement has specialized in providing just such an interpretation, it bids fair to remain a significant movement in economic thought. This is so because institutionalism, in terms of economic policy, leads to national economic programming for full employment and stable growth without inflation. Recent developments in economic theory and in techniques of economic analysis have made national economic programming an effective type of economic program, and so have indirectly lent support to the institutionalist movement. The use of national economic budgets for the projection of full employment total output goals, of input-output studies to determine the labor, raw material, and capital requirements of these goals, of flow-of-funds accounting to measure the financial needs of an expanding total output—all these developments have pointed in the direction of more successful national economic programming activities, and so of a more effective translation of institutional economic thought into concrete economic practice.

Institutionalism as a point of view and as a body of economic interpretation is now thoroughly embedded in the progressive wing of the Democratic Party. While institutionalism is not at present prominently situated in academic halls, it does appear to have permanent riparian rights on the banks of the Potomac River. The strong policy orientation of the institutionalist movement and its willingness to grapple with pressing economic problems make its continued survival and future progress hardly a matter of doubt.

Forest G. Hill: Professor Boulding says he originally found the American institutionalists misguided and unpromising. Today he is interested in dynamics, integration of economics with other social sciences, and the empirical bearing of economic theory; he even risks calling this work neo-institutionalism. His own career supports his thesis that the direct impact of institutionalism on economic theory has been small but its indirect influence large. However, he may be forced to this conclusion by the way he defines institutionalism and economic theory.

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· Professor Boulding suggests that a sociology of dissent would help us understand such critics of traditional thought as Veblen, Commons, and Mitchell. But why has their main influence been indirect, delayed, and received with hostility? We apparently need a sociology of orthodoxy even more. To understand changes in economic thought calls for a realistic theory of knowledge and an intimate awareness of intellectual history. This poses a major problem in social science analysis, upon which Mitchell has done extremely challenging work. However, economists have less interest in this problem today than three or four decades ago.

We need Boulding's distinction between scientific and moral dissent, between criticism of institutions and of analytical content. However, he should

explicitly discuss both elements of dissent, not just the scientific. Since his remarks reflect moral disapproval of Veblen, coolness toward Mitchell, and admiration for Commons, an explicit, reasoned treatment is in order. Not only economic institutions but also the intellectual traditions and procedures of economics pose moral issues; the latter, unfortunately, Boulding does not here acknowledge. Values become intricately involved in economic analysis: problems must be chosen for analysis, assumptions made about man and society, and policy implications drawn from the analysis. These selected problems, assumptions, and policy conclusions inevitably pose normative issues. Elsewhere, Boulding has recognized this ethical aspect of economics; and A. B. Wolfe, J. M. Clark, and Clarence Ayres have emphasized this intriguing subject.

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In Joseph Dorfman's view, Veblen and Mitchell tended to prevent a rigid orthodoxy from developing in America. This purpose was shared by Commons and others. They urged the study of major problems of economic change and policy through comprehensive historical, psychological, and empirical methods. Since they sought to enlarge and reorient economic analysis, they were not only dissenters or challengers of orthodoxy, as Boulding uses these terms, but also reformers of intellectual tradition. In assessing the development and significance of institutionalism, we cannot merely view it as purely negative dissent, lumping the major institutionalists in with Boulding's "hundred-and-one dissenters." Valid appraisal requires analysis of their theoretical position and the unique elements in their thinking. It is essential to go beyond the prevailing stereotyped criticisms of their work, as we may note with Veblen and Mitchell.

The fact that Veblen had an unusual personality and career reveals little about his theoretical significance. A careful reading of Veblen will not show that he used an "instinct psychology" or "racist anthropology." He was concerned not with instinctive or racist behavior, but institutionally shaped behavior. His analysis, after all, stressed the evolution and functioning of economic institutions. He used the "instinct of workmanship" and "parental bent" to analyze and evaluate institutions, not ultimate motivation; and the social psychology he used resembled that of John Dewey, once his colleague at the University of Chicago.

Veblen did not think highly of the engineers, whom he viewed as incurably conservative; their neglect of him would have brought no remorse. His influence in the field of law bore particularly on industrial and financial regulation. His stimulus to the study of industrial organization affected economics much more than law. Commons had far greater interest than Veblen in the legal aspects of economic organization. Through his students, Veblen had some effect on labor economics, and especially business cycle analysis through Mitchell. Veblen influenced consumer economics and the theory of the firm enough to bear mention.

I am puzzled that Boulding should interpret Veblen and Mitchell without using the term business cycles or citing their numerous methodological essays. Their work in these two fields is central to the issue of their "scientific" in-

fluence on economic theory. To see Mitchell's work in any other light would dispute the recognition accorded him as the first recipient of this Association's Francis A. Walker medal for "a contribution of the highest distinction to economics." He was clearly more than an "economic entomologist," or collector of time series. It is unwarranted to say that he merely "collected figures," gave us only "purely empirical leads and lags," "was not . . . much interested" in the integration of economics with other social sciences, "made only a small impact on academic economics," and was not concerned with "the description and understanding of institutions as such."

Mitchell questioned Veblen's method of reasoning and verifying, not his institutional analysis. Mitchell acknowledged that his conception of the money economy—the foundation of his work on business cycles—was Veblenian. He undertook the analysis of business cycles to demonstrate how economic institutions actually function. He regarded this analysis as a work in general economic theory, designed to show that empirical theorizing can throw light on the operation and control of institutions. That his work had a central theoretical core has been affirmed by Arthur F. Burns, J. M. Clark, Milton Friedman, Rutledge Vining, and even Joseph Schumpeter. Mitchell's development of this theoretical structure was hardly implicit or haphazard. He surveyed the theoretical literature for insights, hypotheses, and questions. He then elaborated his empirical inquiries within the theoretical structure of the money economy. This analytical procedure hardly suggests amateurish theorizing carried on ab ovo, without reference to established doctrines. His cyclical analysis should hold great significance for developing dynamic theory. Does Boulding fail to see the theoretical character of Mitchell's work? Does he define "pure theory" in such a way that Mitchell's work falls outside the sacred preserve? Such questions are essential to clarify his attitude toward Mitchell.

In his pragmatic approach, Mitchell formulated his theoretical work to aid policy making. He felt that economic theory could have the objective, empirical, scientific character required in shaping policy. His theoretical approach, designed to cope with problems of economic performance, should lend purpose and usefulness to government planning and welfare economics. His extensive service to government rivaled that of Commons. As government researcher, consultant, and planner, Mitchell, too, deserves notice as an early brain truster and intellectual origin of the New Deal. His students have also been prominent in government work, continuing to the present time—notably, with the President's Council of Economic Advisers.

Despite Boulding's doubt, Mitchell's interest in the integration of economics with other social sciences was second only to business cycles. Like Veblen, he urged economists to study institutions and human nature. Several of his numerous articles on the relation of economics to other disciplines are included in *The Backward Art of Spending Money*, whose title may conceal their theoretical nature. Some of these emphasize psychological problems and the relation between economics and psychology.

Integration of economics with other social sciences strikes Boulding as

desirable but hitherto premature. Earlier efforts at integration were perhaps more belated and inadequate than premature. This work had to begin sometime; there is no reason to wait until these disciplines individually reach a more perfect state. It may be neither candid nor charitable to say that economics is more advanced than related fields. We must avoid being smug or provincial about our supposed technical superiority; we should seize every opportunity for Point Four aid to neighboring disciplines; and we may well benefit from a high export multiplier, unless we let the intellectual terms of trade shift against us. Our export surplus, free-trade policy, and academic good will in related fields have not been notable. Potential gains from inter-disciplinary exchange have been present all along, are growing rapidly, and must be systematically tapped if the social sciences are to maximize their productive benefit. Some concreteness is thus in order as to what is premature and what is appropriate for integration in the social sciences.

Professor Boulding offers an interesting perspective of the larger movement taking place in economics. This perspective has greater merit than his commentary on the major institutionalists. J. M. Clark suggests that the revolution under way in economic thought is far broader than the designation "Keynesian." Although Professor Boulding puts Keynes at the forefront of this movement, he thinks Commons will be accorded a leading place among institutionalists. While Commons deserves increased attention, Veblen and Mitchell have probably had greater influence on American economic thought. Mitchell may have done more than Keynes to advance economics as an empirical science and an integral part of the social sciences.

Frank H. Knight: Professor Boulding's excellent paper has covered most of what seems to me worth saying about institutionalism-short of a treatise in problems and methods in the social sciences. In my few minutes I can add little and most of it has been said before, even by me and from the platform of this Association. Rather than pick out points to approve or criticize, I shall survey the topic in a slightly different way. Besides the limit of time—and personal limitations—I face a special embarrassment: presumably put on the program as an adversary—"Satan" is the Biblical word—I am in fact as "institutionalist" as anyone, in a positive sense. I diverge only in not damning "economics" in its essential meaning. That is what the label stands for rather than any positive import. It is a cry of revolt, ; a call for "anything but" discussion of ends and means and free co-operation. Formally promoting something called by some vague name sounds better than merely using orthodoxy as a cuss word. I also abhor orthodoxy, in its correct historical meaning; but that does not make me denounce the multiplication table, the Pythagorean Theorem, or the laws of motion, though all of these are as unrealistic as the purest pure theory of economics to use another institutionalist epithet. Nor does hating orthodoxy move me to deny that men economize and organize for efficiency through the purchase and sale of goods and services in markets. Boulding has also made the obvious point that condemning analytical economics is rocted in dislike of the organization

it describes—an emotion bound up with refusing to examine it objectively, in critical comparison with possible alternatives.

It is trite to say that economics, like any analytical science, must include more than the most general theoretical principles. There can be no clear line marking where to stop, or especially to start, or what to take as given. If time allowed even a sketch of the scope-and-method problem, a main theme would be the impossibility of a sharp division of labor between disciplines in the study of man and society. Specialization there must be, but it cannot be at all as definite as in the natural sciences; and it is not very definite there, as we move up the scale from mechanics, ether-physics (as it used to be called), and chemistry through the many branches of biology to man. But man belongs to all these realms and a great many more—dealt with by the numerous psychologies and sociologies—and a complete account of man would involve all the sciences, in a highly pluralistic approach.

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To limit my field and keep to the center of our topic, I cut off all the lower levels of subject matter to which human phenomena belong and glance at two main and special categories required in their study. One, as would be guessed, will be means-end rationality, or simply economic behavior. For the other, institutionalism is a fitting name, with tradition, convention, and culture as rough equivalents, and especially "historicism." Man, we all know, is a social animal. That is nothing new in the world, but social life on an institutional basis, largely replacing instinct, emerges with homo. He has a history, in a sense so distinctive that Dilthey and Ortega could say he has no nature but "only" a history—which might read, "only institutions." The process of his development must have been for ages entirely institutional or cultural, after biological evolution ceased. Institutions are connected with speech; and very late in the story, men began to talk about their history and about matters now treated by the natural sciences. For ages, their talk was fictional, in terms of doings of mythical, supernatural heroes or monsters, whose will also controlled ordinary events; but they were thought to be subject to influence, by magical practices. Natural man hates facts of life in general, biological or other. With us today, this attitude has been partly outgrown, in certain fields, mainly from causes other than understanding and love of truth. Human nature is still, as always, essentially romantic. Very lately, talk about causes has begun to be mixed with a little rational objectivity; but this is largely offset by the fact that, in Hume's famous adage, reason is the slave of the passions. For, about human passions, little can be said in a systematic way, and most of that little comes by way of psychopathology.

We study any subject matter for one or both of two reasons: the special satisfaction we call explanation and knowledge for use in controlling a future course of events. All this, too, has its history, as does everything, including history itself, and historical process is basically institutional. The satisfaction of explanation is itself one of the passions, and as mysterious and varied as any. I have noted that until recently it was animistic: myth and superstition (or religion, depending on whether it is ones own or some other that is referred to). A very short time ago in history, rationality—also a passion—

began to intrude among the older ones. Starting in astronomical prediction (n.b., no thought of "control"!), it soon spread into physics and medicine, founding modern progressive technology. Later still, as the idea of objectivity crept into thinking about society—against the utmost opposition of the custodians of sanctity—it largely ran to the equally absurd notion of solving dynamic value problems of taste and judgment by using the same "scientific method" which had transformed life in the field of men's dealings with passive nature; that is, to solving them by denying that such problems exist.

Modern thought explains things either scientifically or historically, chiefly the former in natural phenomena, the latter in human. Both methods have some application in both fields; but on these complex relations I can note only that while historical knowledge seems to explain, it is of little use for predicting the future and hardly any for control. For example, cosmology and biological evolution are quite satisfying as explanation but are not useful for guiding action.

Human society must always be largely of the original institutional character; custom and habit must rule most of what people feel, think, and do. Institutions, I repeat, are more or less explained historically rather than scientifically and are little subject to control. The ideal type is language, about which we can do so little that we hardly think of trying. For that reason, linguistics is the most scientific of the social disciplines—repeat, "for that reason," and note that it is scientific as the word applies to history, and then incompletely so; otherwise prediction, even in theory, could be only hypothetical. We need history to predict or to tell us what we cannot change; we know little enough about the facts, and virtually nothing about causality, or why history seems to explain while itself crying, mostly in vain, for explanation.

Very lately, as noted, institutional change began to produce individualistic mental life; hence individuals are also institutional, in that sense. As men became aware of social institutions, they took up attitudes towards them—chiefly romantic, love and hate. At long last, they have begun to be a little bit rational, i.e., to distinguish and appraise critically, following upon the growth of the scientific attitude towards nature. Most fundamental for objective thought are organization for war and for the treatment of crime. In this last field, science would be particularly applicable, if it existed. In fact, more knowledge raises more doubts about punishment—its effects, its purpose, even the meaning of crime.

One of the latest products of institutional change is individual rationality, in the twofold sense of trying to use means effectively—economically—to achieve ends and to adapt institutions to allow freedom to do so. But those who go that far commonly go on to demand an impossibly complete freedom, ignoring other values which conflict with freedom, become more important at some point, and have to be balanced against it in some compromise. In this connection have arisen two great and distinctive modern institutional systems, closely interrelated: free enterprise and democratic government; also the sciences which study them: economics and politics. The former—the orthodoxy of institutionalist scorn—yields laws which both explain and enable pre-

diction in the twofold sense needful for intelligent action; i.e., predicting what will happen if no action is taken and predicting the consequences of any action proposed. The other half of the social-action problem is agreement in evaluating cultural ideals; on that, no positive science sheds any light, and history not much; it is a matter for critical judgment. As to the free-market economy, nobody thinks it perfect, but most rate it better, as the main framework, than the alternatives, some form of political compulsion. It has the supreme merit of enabling people to co-operate without specific agreement on values, which they would never reach once the forces of institutional history ceased to effect it, unconsciously or through the opium of superstitious fear. Thus it is the only system of reasonably free co-operation possible on any considerable scale. That men are not completely rational in managing their affairs—a favorite lash on the institutionalist whip-is true, but hardly implies that a government, which must be run by men, will be both wise and benevolent in managing those of everybody. However, the role of economics is to predict, not to judge. Its predictions are much less accurate than those of laboratory physical science; but they are better than those based on physical theory alone and much better than most other social predictions—say those underlying criminal procedure or political lawmaking.

Kenneth H. Parsons: Professor Boulding has invited us, in this brilliant and scholarly paper, to make amends for the neglect which economists in America have accorded to three former members of this Association—two of them past-presidents. Of the three men on his honor roll of dissenters in American economics, I admit to more interest in Professor Commons than to either of the other two—Veblen or Mitchell. Consequently, I was pleased to learn of his judgment, that although Commons' work may now be the most neglected, his contribution will eventually likely be the most valuable. I think this estimate is well founded. But, especially I am grateful to Professor Boulding for the breadth and tolerance of his views, on the scope of the field of economics.

Even so, I found the basic logic of his paper a bit difficult—once I attempted to move from the literary to the analytical level of criticism. For the moment at least I have concluded that the difficulty in getting at the deeper issues is to be found in the simple fact that Professor Boulding does not state them. I am not sure that they can be stated very clearly for so many points of view in a very short space.

For my brief part in this occasion, I shall elaborate a bit on Professor Boulding's analysis of Commons' work; then make some suggestions on the problem involved in bringing together insights into economic life achieved in differing frames of reference.

Professor Boulding passed rather lightly over Commons' interest in research. Since this is the very key to the understanding of Commons' contribution, I want to add a few comments on this point.

John R. Commons was an investigator, first to last—even when he was in the classroom. His writings are predominantly progress reports on his research and should be read with this qualification in mind.

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The research which he did, especially during his middle and later years, was designed to be instrumental for experiments in industrial democracy or the creation of a public service state. He was always working close to problems of policy and administration. The character of his research opportunities and responsibilities influenced both his research and the ideas which were projected therefrom.

Commons began his research career at Wisconsin with the monumental Documentary History of American Industrial Society (1910). This work did much to crystallize in his mind his theories of social movements and labor economics and in fact virtually established the study of labor history and trade-unionism as university subjects. In the meantime, he had begun his research in industrial accidents which resulted in the creation of the State Industrial Commission, of which Commons was the principal architect and one of the first administrators. Out of this experience he got a vision of the potentialities for public service of hard-headed progressive businessmen and labor leaders—through appeals to their own self-interest, by administrative arrangements that provided the means for conciliating conflicts and rewarding efficient effort and management. In devising insurance protection against accidents, he insisted that the rates be adjustable to the incidence of accidents in each firm in order to reward progressive industrialists. He concluded that this required an employer's mutual type of insurance company rather than a state fund which would almost surely have uniform rates set by the legislature. He carried this same determination to protect efficient and progressive management over into the individual employer rating provisions of the Wisconsin Unemployment Compensation Act which was designed by him-enacted in 1932, but first introduced in the state legislature in 1921. Meanwhile he had designed and drafted a public utility law in 1907—after some years of research in which he found the fundamental problem to be that of devising regulatory provisions which would meet the due process clauses of the constitutions. In this investigation he discovered the extent and significance of the changing meaning of property in the U.S. during the last quarter of the nineteenth century. This led to seventeen years of study of the development of the Anglo-American political economy which is reported in his Legal Foundations of Capitalism (1924). This book is surely one of the few great research contributions in our time to economic literature. In this study, Commons traces out the changing conception of government and property which occurred during the evolution of British economy from feudalism to modern capitalism. One can see there the way in which the private practices of businessmen, guilds, and landlords were generalized and made into the public law of the land. Furthermore, he traces out similar changes in this country in the conception of property, giving us altogether a quite unparalleled analysis of the ways in which the basic economic structure of an economy changes with the economic development of a free society.

In his theoretical synthesis he conceived of himself as working in the main tradition of political economy. The subtitle of his *Institutional Economics* was *Its Place in Political Economy*. It seemed to him that modern economics lacked basic reference points for the analysis of conflicts of interest and collective action in all its forms.

When I turn from such considerations of what Professor Commons actually achieved in a long lifetime of systematic and devoted inquiry to the criteria which Professor Boulding sets up for evaluating the possible contributions of the institutionalist to the improvement of the main body of economic theory, superficially Commons' career would seem to be a treasury of possibilities. In terms of dynamics, he understood at least some of the deeper sources of dynamism in the American economy. Who else has been so ingenious in formulating the conditions of willing participation as he—in his protection of incentives in accident and unemployment compensation programs and in the realization of the creative productivity potential of treating labor with dignity and respect. Perhaps others have understood the mainsprings of willing effort as well but surely not many.

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Similarly he was remarkably successful, it seems to me, in his investigation of the interrelations of the different aspects of the structure of human action which are usually analyzed in the separate social science disciplines, yet kept his perspective as an economist and his feet on the ground, so to speak. He investigated court decisions to be able to understand the economic theories of judges who were forced to make decisions, in these rigorous laboratories of the human will, on cases involving millions, or even billions, of dollars in property values. But out of it came not a book on law but on the legal foundations of capitalism.

Commons' work was literally designed to be supplementary to and complementary to traditional economics. He considered the achievements of equilibrium economics to be great and indispensable, but he thought that important facets of economic life were by-passed in this market-resource analysis. Yet despite all this, despite the facts of his contributions to the understanding of the dynamics of economic life, his success in being both truly a social scientist and an economist and his achievements in economic research, is there not a real intellectual gulf between him and those who approach economics in a more conventional manner but also desire to broaden the theoretical base of economics. Why?

The answers to this question appear to me to be very complex. Here we can only suggest some of the issues and the directions which a more adequate comment would require. I suspect, however, that a considerable part of the confusion and disagreement in recent years over matters pertaining to economic theory stem from our lack of agreement on the technical issues underlying the systematic formulations of ideas. In the hope of making my remarks more comprehensible and at the risk of seeming tedious, I am listing the issues which seem to me to be involved in developing a systematic set of ideas in economic theory.

- 1. The basic ingredient, so to speak, of economic theory is insight into the meaningful and strategic interconnections within the true character of economic affairs. These insights, once formulated, are themselves refined, as the insight about diminishing returns has gradually evolved into the conception of variable proportions.
- 2. These insights to be productive must be formulated into rigorous "if then" propositions in which the essential and necessary relations are formulated, as the basic insight of the relation of dearness to scarcity is formulated

into what I take to be the basic proposition in the theory of demand: if scarce, then dear.

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- 3. Economic theory, as I understand it, is the name we give to the series of propositions which are deduced, by rigorous attention to possible implications, from the original insights, formulated into propositions. This body of theory does not function as a description of the economic system, for they are not descriptions in the precise meaning of the term. Rather the theory operates as abstract propositions within the processes of inquiry, as a part of the way economists think. The propositions are systematized around assumptions which we might call the "as If" premises of economic thought. We evidently postulate, in these assumptions what we might call our big ideas about the character of the economy, "as if" it were of that character.
- 4. Economic analysis, including economic theory, must, I am persuaded, honor the basic distinction made by philosophers between fact and value. The problem of ascertaining what is fact is different from that of appraising or even understanding the processes of valuation.

I do not believe that we can integrate the insight achieved by the great minds in economics into a unified theory, or theories, unless and until we find some mutually accepted and fundamental, common grounds upon which to base our arguments.

When we really understand the lack of communication between the views of Professor Commons and his formulations and the main stream of economic thought—to use Professor Boulding's simile—we may likely find differing positions on these basic issues, but particularly on the kinds of facts which the different insights emphasize. Essentially, Professor Commons approached economics from the major premise or postulate of treating the economy as a social organization. The facts in his work are therefore social facts—which accounts for the contributions which Professor Boulding noted to the integration of economics with the other social sciences.

From such social premises Commons analyzed the commonly recognized economic relationships, with the effect noted by Professor Boulding. Exchange, he analyzed as transactions. This formulation opened up the way for distinguishing the bargaining transactions of the market place from the rationing and managerial transactions which operate within the great corporate enterprises. Similarly, the firm of conventional economics he analyzed as a going concern—a social organization held together by judgment and the expectations of the participants. Private property turned out to be sets of social relationships, with the intangible property of the ownership of market opportunities being the hallmark of modern capitalism.

This general frame of reference also enabled him to incorporate into his system of ideas his insights regarding the volitional character of man the citizen, noting the significance and the means of eliciting the willing participation of citizens in the economic enterprise. This insight he generalized into the basic proposition that willing participation is the leading principle of organization in a free economy. Similarly, he saw the significance of security of expectations in the creation of economic order where citizens have significant degrees of freedom. It is approximately correct to say that Commons placed

primary emphasis in his formulation on the conditions and the means of general economic order in an age where citizens, corporations, and labor unions have economic power; whereas traditional economics in recent decades has been concerned primarily with formulating the conditions of general equilibrium of optimum resource use.

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The economic theory which Professor Boulding refers to variously as academic economics, static economics, or as having the basic abstraction of the commodity, embraces those basic insights into economic life, I infer, which have been systematized around the postulate of treating the economy as if it were a mechanism. This systematizing seems to me to stem from the Ricardian base, built originally upon analogies to the Newtonian conception of natural mechanics. During the intervening decades the great insights of such strategic interrelations as those among the characters of demand, proportionality, interest rates, investment, and levels of employment, etc., have been gradually incorporated within the body of theory of equilibrium economics.

What is often overlooked in comments upon this body of theory, in my judgment, is that it has actually been the postulate of mechanism which has operated to define the relevancy of inclusion or exclusion rather than the character or actual nature of the economic system from which the insights have been drawn. This comment needs immediate qualification, however, by noting that the existence of a large ingredient of mechanism in our modern economy gives genuine relevance to the postulate—under industrialization and the price system—or the concatenation of industry and the pecuniary calculus—to use Veblen's phrase—and, more recently, the somewhat independent career of the stream of purchasing power. However, I do not see that this system of ideas either directs attention to, or gives systematic guidance for, the analysis of distinctions between public and private, for example. This has the effect of actually neglecting public and social considerations; for it is the private, individual, net income position of firms and individuals which is at the very heart of the systems of equilibria. Neither is there any systematic guidance to the analysis of questions relating to the evaluation of alternative economic systems: communism, capitalism, socialism, etc. This system of ideas is evidently useful in policy analysis primarily in estimating the effects of this or that measure upon the commodity-productionprice-income complex. Characteristically, such policy measures are implicitly treated as something external to the economic system—as interferences.

The analysis of value or valuation in our economy runs in different terms; the parallels or comparisons between Commons' and the more traditional views involve different issues. The minimum basic categories for the understanding of the problem of evaluation in a free economy seem to be two: the individual or private; or the social or public.

The deeper issue for economic analysis is actually to be found in the interrelations between the two areas of valuation. Briefly—and therefore dogmatically—this is where we seem to come out, starting from the two different basic positions. In equilibrium analysis there appears to be an inherent tendency to elevate private considerations to the status of public values. Correlatively, there is the tendency to elevate efficiency to the status

of an absolute value. These follow, I infer, from the general objective of specifying the conditions requisite to general equilibrium, generalized from the requirements for the net income position of individuals or firms.

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In Commons' analysis the problems of social valuation or public value turn out to be details in the more inclusive considerations of social organization. He saw, as I interpret him, that whatever scope society accords individual choice and valuations is a consequence of the latitude for discretionary action which is built into the system. Thus, the problem of public value, in his view, was that of determining the reasonableness of the working rules—which rules define the limits to which individual or private action must be performed, if at all. It is through the assured zones of discretion or security of expectations that individual freedom becomes effective and may become power.

Commons was as much devoted to the improvement in the efficiency of resource use as any economist. But he considered this achievement, as I interpret him, to be necessarily indirect in a free society. He viewed public policy as affecting the use of resources through the reproportioning of inducements, opportunities, and disabilities. In short, a free society requires that efficiency be achieved through freedom, security, and the dignity of man, not through their sacrifice.

CLARENCE E. AYRES: In closing this unusually interesting and profitable discussion I am taking the liberty to enter in the record of this meeting the following two points.

First, as I see it, the object of dissent is the conception of the market as the guiding mechanism of the economy or, more broadly, the conception of the economy as organized and guided by the market. It simply is not true that scarce resources are allocated among alternative uses by the market. The real determinant of whatever allocation occurs in any society is the organizational structure of that society—in short, its institutions. At most, the market only gives effect to prevailing institutions. By focusing attention on the market mechanism, economists have ignored the real allocational mechanism. Hence the hiatus between economics and the other social studies, all of which are concerned with various aspects of the institutional structure of society. Economics is more advanced than those others—in the wrong direction.

Second, what determines the relative scarcity or relative plentifulness of all resources is the state of the industrial arts. Ours is an industrial economy. That is the paramount fact of the modern economic system; and the recognition of that fact is the most constructive achievement of institutionalists generally. Formless and inchoate as the writings of institutionalists have been, that emphasis runs through them all, as it runs through all the writings of Thorstein Veblen. Notwithstanding all his obvious faults and frailties, Veblen's recognition of the significance of workmanship, the machine process, and the state of the industrial arts will classify him in centuries to come as a great constructive pioneer.

Professor Boulding has mentioned my impudent suggestion that he himself

had showed institutionalist leanings. The reason was that in his book by that title he has attributed "the organizational revolution" to twentieth-century technology, and I think rightly so. We owe the vast industrial system of which we are the lucky beneficiaries not to the acquisitive instinct and not to the calculating spirit of the "counting house" but to the accidents of acculturation through which in earliest modern times Western Europe became the seedbed of scientific and technological revolution, and also to the unique fluidity of the institutional patterns of Western society—itself a consequence of the turmoil of preceding centuries—by grace of which the technological break-through occurred.

We are now witnessing the impact of our own industrial revolution upon all the rest of the world, and as we do so the significance of the technological processes and of institutional resistances is being brought home to us far more vividly than ever before. I agree with Professor Boulding that it is circumstances such as these rather than the persuasions of any dissenters that will give direction to the economic studies of the future. I agree with him, too, in thinking it unlikely, and perhaps even undesirable, that the main stream of future economic thinking will be known as institutionalism. But in the years to come economists will be increasingly concerned with the technological and institutional realities by which gross national product, the level of consumption, and the level of employment are determined.

# ECONOMIC GROWTH AND DEVELOPMENT NONECONOMIC FACTORS IN ECONOMIC DEVELOPMENT.

By BERT F. HOSELITZ University of Chicago

An adequate treatment of the varied ways in which economic and noneconomic factors interact in a process of economic growth or development would require an entire book. In order to remain within the short space at my disposal. I shall therefore discuss a special problem and hope that this discussion will convey in a rough way the general flavor of the manner in which we might proceed with a consideration of noneconomic factors in economic development. I should like to select the question of the change which occurs in an economy as it leaves a state of relatively slow growth or stagnation and starts a process of rapid growth. This apparently discontinuous break with the past, which is usually associated with rapid industrialization, has often been described. Students of the different industrial revolutions have pointed to the rapid pace with which an economy broke out of a previous condition of relative immobility and attained within one or at most two generations a level of performance on which selfsustained growth was possible. Much of this evidence has recently been collected in an interesting paper by W. W. Rostow on "The Take-off into Self-sustaining Growth" (Economic Journal, 1956). Apart from a detailed discussion of the take-off period, Rostow's essay also contains a discussion of three stages with the take-off as center. The first stage or period is one of preparation in which the preconditions of the take-off are established. This period may last a century or more. The second stage is the take-off itself, and the third period is the stage of self-sustained growth, when the further development of the economy occurs as a more or less normal and self-generating process.1

If we view the development process as following roughly such a tripartite schema, we are confronted with the problem of how to account for this explosive change which has so aptly been called an industrial revolution. Its inception is, as has often been observed,

¹ Rostow was, of course, not the first to have discovered the sudden incidence of industrial revolutions, nor to have stipulated a tripartite periodization. A similar scheme was presented by G. Célestine, "Dynamique des niveaux de production et de productivité," Économie et Humanisme, July-August, 1952, pp. 60-67; and in one of my articles, "Algunos aspectos de las relaciones entre el cambio social y el desarollo económico," De Economía, July-August, 1954, pp. 611-624. Further references to this process are cited in that article.

rather striking and sudden, and it usually ends almost as suddenly as it began. It has been accompanied in most cases by a concomitant population "explosion" which has obscured somewhat the rapidity and suddenness of economic growth during the discontinuous take-off period if measured in terms of per capita income. What is perhaps most important about the structural changes taking place during the take-off period is the adaptation of previously existing institutions for new ends, especially for capital formation. In fact, Rostow makes the difference in the rate of investment (i.e., the ratio of net capital formation to net national product) the criterion of whether an economy is in a pre-take-off stage or is entering the phase of industrial revolution. Now why should an economy suddenly be capable of saving and investing a larger proportion of its net income, especially if it has apparently been unable to alter the rate of net investment for a very long period previous to the take-off? The answer may be found if we ask whether or not general environmental conditions have been created in the pre-take-off phase which make an increase in net capital formation attractive and achievable.

These "environmental conditions" must be sought chiefly in noneconomic aspects of the society. In other words, apart from the build-up of economic overhead capital, such as a communications and transport system and investment in harbor facilities, some warehouses, and similar installations favoring especially foreign trade, most of the innovations introduced during the preparatory period are based upon changes in the institutional arrangements in the legal, educational, familial, or motivational orders. Once these new institutions have been created, they operate as "gifts from the past," contributing freely to the vigorous spurt of economic activity in the period of take-off. We may then consider that from the point of view of providing an explanation of the process of economic growth, the main functions of the preparatory stage are the changes in the institutional order, especially in areas other than economic activity, which transform the society from one in which capital formation and the introduction of modern economic organization is difficult or impossible, to one in which the accumulation of capital and the introduction of new production processes appear as "natural" concomitants of general social progress.

Let us examine a few cases more in detail in order to see what role some noneconomic institutions have played in bringing about the explosive situation of an industrial revolution and in particular how they have affected the supply of productive factors. For although it has often been asserted that the chief bottleneck experienced by underdeveloped countries is the shortage of capital, there are other factors which are relatively scarce—above all, certain types of skilled

labor (including the services of entrepreneurial personnel). For this reason there is special interest in institutional changes during the preparatory period which tend to affect the supply of capital or of such services as administrative and entrepreneurial activity and technical and scientific skills.

The need for capital on a relatively large scale requires the availability of institutions through which savings can be collected and channeled into projects employing productive capital. Hence a banking system or its equivalent in the form of a state agency collecting revenue and spending it on developmental projects is required. What is also required in a society in which investment decisions are made by private individuals is a legal institution, such as the corporation, which allows the combination of capitals of various individuals in order to support enterprises which, for technological reasons, can be undertaken economically only on a large scale. In Britain all these institutions were in existence at the time its industrial revolution began. It is granted that joint stock companies required a special charter for their formation, and up to the early nineteenth century such charters were granted only for overseas commercial enterprises or for large-scale transportation enterprises. But as capital requirements in industry increased, the corporate form of enterprise came to be more and more widely applied to industry also. By the third decade of the nineteenth century, corporate charters for industrial firms were not uncommon and within the next fifteen years they became the rule in all but small enterprises.

It is also true that bank credit did not play an overwhelming role in the early phases of the industrial revolution in Britain. In fact, in contrast to France and Germany, a relatively large amount of capital employed in the early cotton and iron industry was supplied by merchants and even landowners. But here again, as the requirements of capital supply grew in dimension, the banks began to play a more and more important role.

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Institutions providing for the collective use of capital also had been established in other European countries long before they entered the take-off phase. In France, the Napoleonic codes provided for joint-stock companies of two kinds (sociétés en actions and sociétés en commandite), and both these types of corporate enterprise were adopted by other European countries. The German legal reform lagged behind that of France, but it is significant that a Prussian commercial code, embodying much of the French type of company legislation, was introduced at a very early stage in the industrial upsurge of Germany, whereas the general civil code did not become law until the turn of the twentieth century.

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In Japan, because of the absence of traditions of corporate bodies similar to the medieval European company and because of the strong governmentally induced impetus to industrialization in its early phase, the supply of capital had to be channeled through institutions which differed from those of the West. Although Japan adopted in due course the institution of the Western corporation, the immediate postresoration process of capital formation relied upon governmental capital creation and, more importantly, upon a change in the structure and hierarchy of Japanese society. In the new social order inaugurated with the Meiji restoration there developed an association of samurai and large-scale capitalist merchants and farmers. This association, which later also aided in the development of the monopolistic zaibatsu, had antecedents which reach far back into the pre-Meiji period. All through the nineteenth century, the economic basis of Tokugawa society had begun to crumble. Although political power remained officially in the hands of the shogun, it began slowly to pass into the hands of some of the more powerful clans; at the same time the economic basis of a predominantly agrarian quasi-feudal society had ceased to function. There were masses of impoverished samurai who, in order to make a livelihood, were forced into a life of business or farm administration. Moreover, there was a simultaneously rising class of merchants and large farmers and farmer-money-lenders, whose presence disturbed the officially imposed rough equality among the members of the nonnoble classes. The gradual acquisition of power by these elements and their association with disgruntled samurai was a phenomenon whose beginning must be looked for in the period when, on the surface, the rule of the shogun appeared unimpaired. But this association was an important factor leading to a reinterpretation on the part of Japan's political elite of the over-all systemic objectives of the society. Whereas before the Japanese government had been concerned only with power, it was now clearly recognized that within this concern the development of the economy was an important, and perhaps the most important, feature. In this way an institutional framework, supported by an ideology, was created which became an efficient and powerful support of capital formation.

It is within a framework of this kind that a comparative institutional analysis of patterns of capital formation in economic development might be undertaken. Given the social and political forces at play, one could appraise by means of such an analysis the role which might be played by development corporations and investment banks or fiscal bodies in the collection of savings and the channeling of these savings into productive investment. One could appraise in this latter case the alternative function of a policy of forced savings either by inflation or

by taxation and could relate the potential efficacy of each of these alternative policies to existing social and political institutions.

At the same time, one would find that the lack of suitable institutions or the presence of institutions which may lead to dissipation of accumulated savings will tend to prevent a society from arriving at a stage in which a take-off is likely or even possible. For example, nineteenth-century China had a series of institutional arrangements which facilitated the accumulation of capital. One was the institution of licensed merchants, such as the hong merchants at Canton who were supported by the government in their monopolistic control of foreign trade; another was the institution of imperially licensed salt merchants who enjoyed regional monopolies in the production and sale of salt. There were other groups of privileged traders, and even a large number of not specially privileged ones, who achieved considerable success in the amassing of large fortunes. But within the Chinese system the merchants operated upon the sufferance and with the support of the bureaucracy, and thus any profits made in trade or industry had to be shared with officials. The officials invested their share in land or spent it on luxury consumption, with the result that large accumulations of liquid funds tended to become sporadically dissipated rather than channeled into productive investment. Moreover, even in the few instances in which, with the aid and support of officials, capital was invested in productive enterprises, profits, instead of being reinvested, were distributed among a large number of claimants among the officialdom; the demands on trading, shipping, or industrial firms for the distribution of earnings among officials on all levels of the administrative scale were so strong that it was often difficult to maintain the initial capital intact. Thus the institutional tie-up between the merchant class and officialdom in China, superimposed upon the heavy tax system, contributed in Ch'ing China to the unavailability of capital accumulations of sufficient magnitude to form a foundation for rapid industrial development.

Let us now turn to the second problem of supply: the availability of skilled labor of various kinds, chiefly entrepreneurial services and the services of skilled administrators, engineers, scientists, and managerial personnel. These rather than manual skills are the types of labor normally in short supply in nonindustrialized countries, and it is the overcoming of bottlenecks in the supply of these kinds of services that a major developmental effort usually needs to be made. Since entrepreneurship and administrative talent on the one hand and scientific and engineering services on the other usually are associated with different institutions, it will be convenient to separate the discussion of the institutions within which these skills and inclinations

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to the pursuit of these occupations are fashioned. We shall first turn to the problem of the diffusion of science and technology.

As in the case of institutions designed to aid in the accumulation of capital, technological and scientific investigations had become institutionalized in Western Europe long before the countries which experienced a period of take-off actually entered the phase of industrialization on a rapid scale. For Britain this fact is well documented and has often been noted. The Royal Society was officially formed in 1662, although by 1645 there had been already in existence a small club of "divers worthy persons, inquisitive into natural philosophy, and particularly of what was called the New Philosophy, or Experimental Philosophy." Although its early extensive interest in technology was not fully maintained throughout the early eighteenth century, it was revived by the middle of the century and strengthened by the establishment in 1754 of the Society for the Encouragement of Arts. Manufactures, and Commerce. It is superfluous to describe in this place the institutionalization of scientific and technical progress in Britain during the seventeenth and eighteenth centuries more specifically, since a perusal of Robert K. Merton's Science, Technology and Society in Seventeenth Century England (Bruges, 1938) and G. N. Clark's Science and Social Welfare in the Age of Newton (Oxford, 1937) will vield exhaustive descriptions of this process. By the onset of the industrial revolution, technological research was widespread and had spilled over from being practiced in the laboratories of "experimental philosophers" to being carried on also in workshops, mines, and manufactories. In France and also in Germany, academies similar to the Royal Society were established in imitation of this organization, soon after it had started to operate, and in France especially technological training was given a tremendous impetus by the foundation of the École Polytechnique in 1794. This school became the pet of Napoleon, and it was through its influence more than any other that by the beginning of the nineteenth-century France was in the forefront of scientific achievement. By 1825, Justus Liebig, who had studied under Gay-Lussac in Paris and had there convinced himself of the superiority of the French method, introduced laboratory science into Germany, and from that time on experimental and applied research in mechanics. chemistry, metallurgy, and other fields became common in German universities and technological institutes.

Thus in the various European countries there existed firmly entrenched institutions for scientific and technological research and training well before the onset of rapid industrialization. Similarly in Japan there had been considerable interest in "Dutch studies" under the Tokugawa, Many Japanese were engaged in learning Dutch and by

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means of this language became acquainted with Western science and technology. Schools for Dutch studies were established, not only by the shogun himself, but also by some of the more important clans, notably the Saga in whose territory Nagasaki was located. These schools taught not only languages but also such subjects as Western mathematics, astronomy, geography, physics, and metallurgy. The result was that before Perry's arrival there had been founded a number of iron smelting plants and foundries built by native engineers on the Western model, and by 1853 the Saga foundry cast the first satisfactory iron gun. In the same year a reverberatory furnace was built by Japanese engineers of the Satsuma clan, and shortly thereafter two more furnaces and supporting fabricating works by the Satsuma clan and the Mito clan.2 It would be false to exaggerate the influence of these institutions and technical attainments. They are symptoms rather than results of a change in institutional arrangements affecting scientific research and technological achievement in Japan. But the practice of Dutch studies and the adoption of Western techniques before the fall of the shogunate set a stage which made possible the rapid adoption of Western educational and research facilities in science and technology once the new order had set in.

Again the picture was different in nineteenth-century China. Rather than enter into a lengthy elaboration of the role of Western science and technology in China, I should like to cite a passage from Hsiao-Tung Fei, who is an accurate and imaginative interpreter of Chinese "traditional" society. Fei says:

In Chinese traditional society the intelligentsia have been a class without technical knowledge. They monopolized authority based on the wisdom of the past, spent time on literature, and tried to express themselves through art. Chinese literary language is very inapt to express scientific or technical knowledge. This indicates that, in the traditional scheme, the vested interests had no wish to improve production but thought only of privilege. Their main task was the perpetuation of established norms in order to set up a guide for conventional behavior. A man who sees the world only through human relations is inclined to be conservative, because in human relations the end is always mutual adjustment. And an adjusted equilibrium can only be founded on a stable and unchanging relation between man and nature. On the other hand, from the purely technical point of view, there are hardly any limits to man's control of nature. In emphasizing technical progress, one plunges into a struggle in which man's control over nature becomes ever changing, ever more efficient. Yet these technical changes may lead to conflict between man and man. The Chinese intelligentsia viewed the world humanistically. Lacking technical knowledge, they could not appreciate technical progress. And they saw no reason to wish to change man's relation to man.<sup>3</sup>

If we turn to institutions regulating the supply of entrepreneurial or managerial services, the picture is similar. But with reference to entrepreneurship in particular, there appears also to be involved not only an institutional but above all a motivational factor. Accumulation

<sup>&</sup>lt;sup>2</sup> Cf. Thomas C. Smith, Political Change and Industrial Development in Japan: Government Enterprise, 1868-1880 (Stanford, 1955), pp. 4-7.

\*Hsiao-Tung Fei, China's Gentry (1953), p. 74.

of capital and technical or scientific knowledge can be explained by pointing to the institutions through which practices of behavior leading to investment or the acquisition of technical knowledge may be furthered. Entrepreneurship is a more evasive thing. It is not so much a particular set of institutions through which it is brought to bear, but its presence or absence; its vigor or debility depends rather upon a whole series of environmental conditions and appropriate personal motivations. It has been shown—in my opinion successfully—that entrepreneurship is associated with a personality pattern in which achievement motivation is strong. But the presence of strong achievement motivation in a group of individuals does not necessarily produce an abundance of entrepreneurs unless certain other general conditions of social structure and culture strongly favor achievement-oriented individuals to enter economic pursuits. High achievement motivation has also been found among military leaders and may be found among scholars, priests, and bureaucrats. It is not too difficult to show that in a society in which the acquisition of wealth is regarded as a good thing in itself, persons with the appropriate motivational disposition will tend to enter an entrepreneurial career. But what about societies in which the accumulation of wealth in itself is frowned upon, or where it is considered to be a worthy object only if performed under certain restrictive conditions? What about a society in which the warrior, the priest, or the government official is rated vastly above the merchant or the industrialist?

Thus when we discuss the factor of entrepreneurship we must go beyond the mere analysis of social institutions in a limited sense and must include in our purview the entire social fabric in which this type of social behavior becomes predominant. But if we put the question in this form, we are immediately confronted with the further question of whether the same type of social constellation which provides a fruitful field for the development and exercise of entrepreneurial activity does not simultaneously further institutions designed to facilitate capital formation and scientific and technical progress. I believe, on the basis of my reading of the social and economic history of those peoples which have shown the capacity for rapid economic advance and those which have so far failed in this capacity, that the over-all social framework which favors entrepreneurship also favors scientific and technical progress and the development of institutions fostering the formation of capital.

In support of this proposition, one could show that the countries of Western Europe and Japan which have developed viable institutions for the accumulation of capital and its channeling in large lumps into productive investment and institutions enhancing the supply of persons

capable of tackling the scientific and technological problems required for efficient production, also have developed vigorous entrepreneurial personalities, and that China, which in the nineteenth and early twentieth century has failed to produce these institutions, also has had a paucity of able entrepreneurs. The fact that Chinese emigrants. in South Asia have, on the whole, succeeded in commerce and, at any rate, appear to have outdistanced in business acumen and entrepreneurial spirit members of their host peoples is rather a confirmation of this proposition, For I do not mean to argue that the Chinese have less inherent capacity for business leadership than other nations. The social fabric of imperial China was such that whenever potential motivations for entrepreneurial activity developed in aspiring young men, they were deflected into other career lines; and the men who in Western Europe or Japan would have taken on a business career tended to become officials or scholars in China. And once they had attained such positions their preoccupation was, as Professor Fei has argued, directed upon preservation of existing human relations rather than on innovations either in technology or in business enterprise.

Let me summarize the argument presented so far in a few sentences, in order to outline the conclusions at which we might arrive. Economic growth is a process which affects not only purely economic relations but the entire social, political, and cultural fabric of a society. The predominant problem of economic growth in our day is the overcoming of economic stagnation, which normally takes place through a process of industrialization. In most recorded cases in which industrialization took place and led to a level of self-sustaining growth, this phase of economic development was initiated by a rapidly "explosive" period which, in concordance with Rostow, we may call the take-off. The rapid structural and organizational changes affecting the productivity of a society which take place during the take-off phase are made possible because in a previous phase social institutions were created which allow the successful overcoming of supply bottlenecks, chiefly in the field of capital formation and the availability of a number of highly skilled and specialized services. The creation of these social institutions in turn, especially the "institutionalization" of entrepreneurship, i.e., an innovating uncertainty-bearing activity, requires the establishment of a social framework within which these new institutions can exist and expand. In the last resort, we may thus have to answer the question of how such a social framework develops or is brought about by conscious design.

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The answer to this question must be based on a general theoretical understanding of the nature of social and cultural change and, so far as I am aware, no general theory of social change which is universally accepted by sociologists exists as yet. It is clearly impossible for a nonspecialist to develop such a theory, but from the existing literature some general hints of what are some of the main points in this process of theorizing may be gleaned. Among these pieces of a theory of change, three concepts and their implications appear to be most significant for our problem. These are the appearance of behavioral deviance, the emergence of cultural or social marginality, and the process of redefinition of societal objectives by an elite. I have discussed these processes more extensively in another place and shall confine myself here, therefore, to presenting merely a sketch.<sup>4</sup>

Let us first turn to a brief consideration of social deviance. Although it may occur in many fields of social action, we are concerned here primarily with those forms of deviant behavior which are relevant for economic activity and organization. Now if the concept of deviance is to have operational meaning, it cannot be interpreted as signifying simply behavior which is new, but it must imply that this set of innovating acts is opposed in some way to existing social norms or approved forms of behavior. In other words, a deviant always engages in behavior which constitutes a breach of the existing order and which is either contrary to, or at least not positively weighted in, the hierarchy of existing social values. If we apply this concept to the behavior displayed by businessmen and merchants in the course of the economic development of Western Europe, we find that we can speak of genuine deviance in those periods and societies in which entrepreneurial behavior did not belong in the category of social actions which were considered as constituting the "good life." As late as the fifteenth century this was true of financial entrepreneurship. which was always tainted by the official opposition against usury. And later, when financial entrepreneurship became fully respectable, industrial entrepreneurship came to be regarded with some disdain because it dirtied one's hands. These sentiments toward business or financial activity as not quite proper for a gentleman to carry on are familiar in many underdeveloped countries today. For this reason, deviant behavior is often exercised by persons who, in some sense, are marginal to society. In medieval Europe the earliest moneylenders were often foreigners. In Italy at the time of the Gothic and Langobard rule, they were Syrians, Jews, and Byzantines. Later when Italians turned to financial entrepreneurship on a large scale, the Genoese and

<sup>&</sup>lt;sup>4</sup>Cf. my article "Sociological Approach to Economic Development," in Centro Nazionale di Prevenzione e Difesa Sociale, Atti del Congresso Internazionale di Studio sul Problema delle Aree Arretrate (Milan, 1955), pp. 755-778.

Pisans, Sienese and Florentines, who were all lumped together under the name of "Lombards," became the financial entrepreneurs north of the Alps.

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The role of marginal individuals in various economic pursuits in many underdeveloped countries is eminently manifest today. One could cite the Chinese in various South Asian countries, the Indians in East Africa, and the widely scattered Lebanese who make their appearance as businessmen in West Africa, Latin America, and elsewhere in less advanced countries. We also should count a considerable number of American and other voluntary Western expatriates among this class of marginal individuals. Some who attempt to find an escape from their marginal position in the arts have tended to congregate on the Seine or the Arno, but those who find business more congenial are to be found all over Latin America and more recently also in many parts of Asia and Africa.

What is the mechanism which allows marginal individuals to perform the roles they apparently have so widely accepted? As Robert E. Park, the inventor of the concept and of the significance of social marginality, has stressed, marginal men are—precisely because of their ambiguous position from a cultural, ethnic, or social standpoint—very strongly motivated to make creative adjustments in situations of change, and, in the course of this adjustment process, to develop genuine innovations in social behavior. Although many of Park's very general propositions about marginality have been considerably refined by subsequent researchers, the theory of social marginality has not advanced enough to supply sufficiently convincing evidence for the role it may play in the explanation of episodes of social deviance wherever they occur. Even if it is admitted that marginal individuals tend to make creative adjustments more often than to relapse into new or old orthodoxies, the record is not at all clear, and there are some students who warn us that marginal individuals are more prone than others to experience anomie and thus to become carriers of trends leading towards social disorganization rather than to innovations of a creative type.

In circumstances in which a certain amount of deviant behavior has been displayed, the establishment of a new social institution is invaluable. E. H. Carr, writing in a different context, expressed the opinion that "the ideal, once it is embodied in an institution, ceases to be an ideal and becomes the expression of a selfish interest, which must be destroyed in the name of a new ideal." Carr here expresses succinctly the interaction between social deviance and the growth of institutions. Once a form of deviant behavior can find the shelter of an institution, it becomes routinized, it ceases to be deviant, and it tends to

<sup>&</sup>lt;sup>5</sup> Edward Hallet Carr, The Twenty Years Crisis (London, 1940), p. 92.

become an accepted mode of social action. But the institution in which it is "laid down" forms an advance post, so to speak, from which further deviance is possible. Thus the institutions which arose in Western Europe before the industrial revolution and in Japan before the Meiji restoration were already the end products of a process of social change; but they, in turn, made possible, by their very existence, further social and economic change.

Whether or not deviant social behavior will lead to new social institutions and the routinization of new forms of behavior depends upon a number of factors which we cannot discuss here in detail. However, it is clear that one of the most important determinants of the relative success of deviance will be the system of sanctions which exist in a society. Such sanctions may be internalized, i.e., they may reside ultimately in the values and beliefs of people; or they may be external sanctions, i.e., they may be imposed by individuals in power, by the elite, against actual or would-be deviants. In imperial China, it appears that both types of sanctions were very strong. In pre-Meiji Japan, internal sanctions had broken down in some areas and the power of the shogun had decreased sufficiently so that many external sanctions were not adequate to prevent the formation of new institutions, or at least of their rudiments.

But it is clear from what has been said that the over-all strength and multiplicity of sanctions is an important determinant of the forms of deviance which are possible and successful, the kinds of persons (marginal or nonmarginal individuals) who may engage in deviant action, and the speed with which deviance will result in new social institutions. Moreover, we should remember that sanctions rest with a different force upon different individuals in a society and that often the position in the social scale which a person occupies determines the degree to which he is subject to internal or external sanctions. We may then distinguish two cases in which change is slow because sanctions against deviance are strong. One is the case of an authoritarian regime in which external sanctions are strong and in which deviant behavior is often reserved for outsiders or marginal persons. The autocratic empires of antiquity, and the medieval period roughly conformed to this picture, although in all these instances the force of external sanctions was buttressed by a vigorous system of widely accepted social values which constituted supporting internal sanctions.

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The other case—which is of greater importance for us—is the country in which internal sanctions against social change among the masses of the people are quite strong and in which the members of the elite wish to employ this for whatever societal objectives they favor. As long as an elite is interested primarily in maintaining its own position of

power and privilege, this may mean that the masses are degraded, that economic progress is slow, and that general poverty prevails. But in a few cases the members of the elite have reinterpreted the social objectives to lie in the direction of economic progress. This, I believe, was one of the main changes in Japan after the Meiji restoration, and it appears to be paramount in many underdeve oped countries of today.

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In general, the outward aspects of social transformation occurring under the impact of deviance, as against one taking place through a reorientation of social objectives on the part of an existing elite, will vary. The second type of social change may be more "orderly"; rather than developing entirely new institutions, new meaning may be given to existing old ones; and whereas in the former process industrialization will be preceded normally by a substantial alteration in relations between social classes, this will not take place, or only to a smaller extent, in the second case. For example, the basic social relations in Japan have changed singularly little from the time it was a quasifeudal empire based primarily upon agriculture to the present when it is a predominantly industrial nation. Similarly, in some underdeveloped countries, where the development effort is spearheaded by the governmental elite, rigorous controls are often exercised to prevent social disorganization of various forms from setting in or taking on major proportions.

Since the development of new institutions by means of deviance has usually been outside the control and often even in opposition to the aims of the elite, it has been designated as an autonomous process. It also has involved conflict, and in Marxian theory it was described as a dialectic process called forth by the intrinsic historical forces of the class struggle. The alterations of social institutions by the elite, on the other hand, may be designated as a process of induced or planned change and, depending upon the distribution of power within a society, may proceed at a controlled rate. Moreover, in a system of induced change, some influence may be exerted on the timing with which new social institutions are created or old ones imbued with new meanings. Thus the clear distinction between a preparatory period for a take-off which could be relatively easily identified for countries with autonomous patterns of social and economic change becomes blurred in a country with induced change. Nevertheless, it appears that even in conditions in which social and economic change is controlled very tightly, the function of new institutions to influence changes in social behavior must not be overlooked with impunity. This seems to indicate that ultimately a theoretical system may have to be evolved in which the interrelations between the various processes determining institutions embodying social change are elucidated. We have more precise knowledge on the manner in which deviance leads to the establishment of new social institutions than on the process of how this is attained by methods of induced social change, because the former can be studied on the example of the social and economic history of Western countries. There, numerous sources exist, and the process has been going on for centuries. It would be an important step forward in our understanding of the noneconomic aspects of economic development if we could develop more certain knowledge of these processes as they occur presently in situations of induced economic growth.

### ECONOMIC FACTORS IN ECONOMIC DEVELOPMENT

## By Joseph J. Spengler Duke University

"New ideas do not lead to the abandonment of the previous heritage." G. J. Stigler, in Five Lectures on Economic Problems.

Pursuant to my assignment I shall identify the main economic factors stressed at post-1950 meetings of cur Association and in recent writings on economic development, together with their roles in economic growth. I shall not treat explicitly of theories of economic growth as such, or of the ontological cause-effect chains through which both economic and noneconomic factors may influence economic growth.1

The strictly economic factors governing economic development are variously classifiable; herein they are collected and treated under three heads. In category I are assembled (1) the main physical agents of production—labor force, reproducible wealth or capital, and provisionally nonreproducible wealth (land and natural resources)—and (2) applied technology. Under category II are included mechanisms and other circumstances which dominate the allocation of agents of production and of finished goods and services (price system, extent of market, division of labor, intersector balance and aggregate demand, etc.). In category III are grouped (1) the major economic decisionmakers and (2) the environment of economic decision. The roles played by factors included in these categories vary with the degree of backwardness of economies. In backward countries, exogenous or noneconomic factors exercise relatively most influence; the autonomy of an economic system as such increases as the society including it progresses, and therewith the applicability of economic theory.3

¹It is not always easy to distinguish between economic and noneconomic factors (e.g., see C. Wolf, Jr., "Institutions and Economic Development," \*\*Emerican Economic Review, 1955, pp. 867-883). Intervariable sensitivity may, however, serve as a criterion: variables which are sensitive in the short run to changes in variables clearly identifiable as economic (political; social) probably are economic (political; social) variables. It has been possible to cite only some of the recent literature on development, canvass of which has been facilitated by Ford Foundation assistance.
²E.g., see N. S. Buchanan and H. S. Ellis, \*Approaches to Economic Development (New York, 1955); W. A. Lewis, \*The Theory of Economic Growth\* (London, 1955); M. Abramovitz, "Economics of Growth," in B. F. Haley, ed., \*A Survey of Contemporary Economics (1952), Chap. 4; my papers cited in ibid., p. 135. T. W. Schultz suggests that economic growth is the result of increase in "the quantity of reproducible goods, the quality of people as productive agents, and the level of the productive arts," with extension of the market often serving to reduce input-output ratios and with nonreproducible sion of the market often serving to reduce input-output ratios and with nonreproducible factors acting, through the medium of diminishing returns, as a drag on growth. See "Latin-American Economic Policy Lessons," AEA Papers and Proceedings, May, 1956, pp. 425-432, especially pp. 431-432.

H. A. Innis' studies of Canada led him to conclude that "a new country presents

## I. Physical Agents of Production; Applied Technology

Under this head we consider (1) the physical agents of production and (2) applied technology. Enterprise might also be included here, since enterprise, capital, and know-how are quite complementary above all, in the realm of international investment, where enterprise, capital, and know-how commonly move en bloc. Because of its organizational and creative role, however, enterprise4 is included under III.

1. Of the physical agents of production, labor and reproducible wealth are of greatest importance for gross economic development. The bulk of output is imputable to these agents, and their quantity is augmentable. Land and some natural resources, in contrast, have declined in relative, though not in absolute, importance in advanced countries. Improvements in technology have diminished their input per unit of output, and the substitution of other agents for land and/or particular natural resources has sometimes reduced their relative scarcity. However, because of the eventual diminution of the marginal substitutability of other agents for land and natural resources, together with their essential nonaugmentability, increasing relative scarcity of land and natural resources may be expected in time to decelerate the growth of income per head should population continue to grow.6 At present, however, most underdeveloped countries—especially those poorly equipped with cultivable land and natural resources—seek to increase output per unit of input and thereby make available more produce and raw materials for nonagricultural purposes.

In the absence of increasing returns—a phenomenon not likely to be encountered in densely populated underdeveloped countries—an increase in output per worker will not accompany an increase in the labor force unless either employment per worker rises or the quality and the composition of the labor force improve. So long as there is unemployment and underemployment, average employment per mem-

certain definite problems which appear to be more or less insoluble from the standpoint of the application of economic theory as worked out in older highly industrialized countries." See Contributions to Canadian Economics (University of Toronto Studies, History and Economics, II, 1929), p. 52; also W. T. Easterbrook, "Innis and Economics," Canadian Journal of Economics and Political Science, 1953, pp. 291-303.

See F. Harbison, "Entrepreneurial Organization as a Factor in Economic Development," Quarterly Journal of Economics, 1956, pp. 364-379.

See my "The Population Problem: Dimensions, Potentialities, Limitations," American Economic Review, May, 1956, pp. 339-342, and references cited; T. W. Schiltz, op. cit., pp. 430-432, and Economic Organization of Agriculture (New York, 1953), Chaps. 7-8; also D. G. Johnson, "Allocation of Agricultural Income," Journal of Farm Economics, 1948, pp. 734-735. 1948, pp. 734-735.

"While increases in land per farm worker and fertilizer per acre may both contribute greatly to increase in output per farm worker, it is the input of fertilizer that is most readily increased. According to one estimate, based upon a number of countries, increases readily increased. According to one estimate, based upon a number of countries, increases of 0.28, 0.43, and 0.29 per cent, respectively, in agricultural output accompany increases of 1 per cent, respectively, in agricultural labor, in arable land, and in rertilizer. See J. P. Bhattacharjee, "Resource Use and Productivity in World Agriculture," Journal of Farm Economics, 1955, pp. 64-66, 69-70. See also works in note 20 below.

certain definite problems which appear to be more or less insoluble from the standpoint

ber of the labor force may be increased, provided that requisite complementary agents of production and finance are available, and that the impact of bottlenecks, more common in backward than in advanced countries, can be cushioned. Unemployed and underemployed persons are encountered in relatively greater number, as a rule, in underdeveloped countries with dense populations than in those which are sparsely settled; in the former, moreover, population growth is more likely to add to unemployment than in the latter. It is advisable, therefore, that as much as possible of the increase in output gotten through setting unemployed persons to work assume the form of capital, and that enough of it be diverted into agriculture.

Improvement in the quality and the composition of the labor force usually presupposes occupational differentiation, together with the suitable education and technical training of its members. Improvement ensues in the content of men's minds, whereon, in the end, economic progress depends. Whence H. Myint, after distinguishing between underdevelopment of a country's resources and backwardness of its people, remarks that backwardness tends to persist so long as an economy is oriented principally to the use of undifferentiated and unskilled hired labor and/or of peasants utilizing simple techniques.8

'See J. S. Duesenberry's discussion in AEA Papers and Proceedings, May, 1952, pp. 568-566, especially pp. 563 ff.; W. A. Lewis, "Economic Development with Urlimited Supplies of Labour," Manchester School, 1954, pp. 139-191; T. W. Schultz, "Latin-American Economic Policy Lessons," loc. cit., pp. 426-427. Compare ECAFE and ECLA reports, together with reports of International Bank Missions, on labor situations in more and less densely populated countries. In the text above I passed over the argument that, just as unemployment arises in underdeveloped countries when the labor force increases unduly rapidly relatively to the slowly growing stock of complementary agents, so may unemployment and retardation of economic growth arise in advanced countries because the labor force grows too slowly. For insufficiency of growth of the labor force fosters overaccumulation of capital, and this is succeeded by decline in investment and increase in unemployment, it being assumed that full utilization of both the labor force and the stock of capital is not simultaneously attainable. The validity of this argument depends largely on the assumption of little variance in the capital-labor ratio. See D. Hamberg, Economic Growth and Instability (New York, 1956), Chap. 5; J. H. Power, "Capital Intensity and Economic Growth," AEA Papers and Proceedings, May, 1955, pp. 197-201, and E. Domar's comments, together with the papers cited, ibid., p. 223; Irma Adelman and Orlando Lobo, "Full Employment vs. Full Capacity," ibid., 1956, pp. 412-419. See also Joan Robinson, The Accumulation of Capital (London, 1956), Chaps. 15, 18. See below, note 32 and text.

"An Interpretation of Economic Backwardness," Oxford Economic Papers, 1954, pp. 132-163; also idem, "The Gains from International Trade and the Backward Countries," Review of Economic Studies, 1954-55, pp. 129-142. Presumably there exists a spectrum of rates of modernization, ranging from the very low through the optimal to the very high. The rate accompanying foreign investment, for example, tends to be lower, it is supposed, when such investment is situated in what amount to enrlaves surrounding extractive activities (e.g., oil) than when it is integrated into a country's economy (e.g., Sears Roebuck stores). It is overlooked that the latter type of investment is rarely feasible in the absence of prior exploitation of a country's natural resources, and that even enclave investment introduces know-how and new tastes and aspirations as well as increases in real purchasing power. It is true, however, that the diffusion of change from investment is more likely to encounter checks when it is of the enclave type. See the National Planning Association studies on American business abroad.

Industrialization is stressed by spokesmen for backward countries, therefore, because they believe that it entails modernization of economic life in these countries: for with modernization they associate a number of changes that make for increase in the productivity of labor in the domestic economy; namely, decomposition of the bonds of tradition, commercialization of economic activity, differentiation of the labor force, and transformation of the content of workers' minds.

Some but not all of the determinants of the growth of a country's labor force have been fairly well established. Thus, how a country's labor-force/population ratio responds to changes in the age composition of its population is better established than are the circumstances which govern the ratio of the labor force to that part of the population of working age. Still less well established are the circumstances that govern the natural increase of a population and hence eventually (barring migration) of that portion of it which is of working age. For while the causes, together with the impact, of changes in agespecific mortality are fairly well understood, how gross reproduction responds to changes in income and other relevant circumstances is not yet well established. Models have been devised to represent this response, but they remain lacking in empirical content.<sup>10</sup> At present, in many underdeveloped countries (Japan and India being exceptions) attention still is focused upon increasing income faster than population rather than upon regulating numbers.

It is upon the growth of reproducible wealth that countries seeking growth of per capita income still place most explicit emphasis, presumably because income growth appears to be measurably connected with wealth growth and because technological improvements sup-

<sup>6</sup> Studies under the auspices of the National Bureau of Economic Research are contributing greatly to our knowledge of the growth of the American labor force: C. D. Long's forthcoming *The Labor Force and Economic Change*; the Universities— National Bureau Committee volume on Measurement and Behavior of Unemployment; National Bureau Committee volume on Measurement and Behavior of Unemployment; studies dealing with the expansion of employment in various sectors of the American economy; and forthcoming studies by Simon Kuznets and Dorothy S. Thomas. Much useful internationally comparative information is to be found in Simon Kuznets' Toward a Theory of Economic Growth (mimeographed, 1956); the text but not the statistical appendix of this paper is included in R. Lecachman, ed., National Policy for Economic Welfare at Home and Abroad (Garden City, 1955). See also United Nations, The Determinants and Consequences of Population Trends (New York, 1953), Chaps. 7, 11, and reports of ECLA and ECAFE. Internationally comparable studies of the effects of wage-rate changes (which influence hours worked more than number of workers),

wage-rate changes (which influence hours worked more than number of workers), urbanization, educational requirements, etc., remain to be done or compiled.

<sup>10</sup> See H. Liebenstein, A Theory of Economic-Demographic Development (Princeton, 1954); T. Haavelmo, A Study in the Theory of Economic Evolution (Amsterdam, 1954); also K. Boulding, "The Malthusian Model as a General System," Social and Economic Studies (Jamaica, B.W.I.), 1955, pp. 195-205. Empirical elements of importance in the demography of underdeveloped countries are treated in F. Lorimer et al., Culture and Fuman Fertility (UNESCO, Paris, 1954), and by Kingsley Davis (with Judith Blake) in "Social Structure and Fertility: An Analytical Framework," Economic Development and Cultural Change, 1956, pp. 211-235, and "The Amazing Decline of Mortality in Underdeveloped Areas," AEA Papers and Proceedings, May, 1956, pp. 305-318.

posedly follow in the wake of investment. 11 It has become common practice to assume a marginal capital-output ratio—usually one lying between 1:1 and 4:1—and arrive at a country's capital requirement by multiplying the desired increment in national output by this assumed ratio.12 There then remains only the task of providing the required capital out of unemployed resources, out of resources obtained from abroad, and out of employed resources diverted from the production of consumables to that of capital. This way of proceeding, of course, tends to make for underestimates of the importance of both enterprise and capital maintenance, for disregard of the variability of the capitaloutput ratio, and for neglect of the fact that some forms of investment are much more conducive to longer run growth than are others.<sup>13</sup> It does, however, assign great importance to capital formation, especially in underdeveloped countries where the rate supposedly is relatively low.14 Hence it results in emphasis upon the importance of savings-

<sup>11</sup> The role of capital is played down by A. Cairncross both in his Home and Foreign Investment 1870-1913 (Cambridge, 1953), Chap. 1, and in his contribution to L. Dupriez,

Housewheth 1870-193 (Cambridge, 1935), Chap. 1, and in his contribution to E. Baphes, ed., Economic Progress (Louvain, 1955).

22 E.g., see on this ratio P. C. Mahalanobis, "Some Observations on the Process of Growth of National Income," Sankya, 1953, pp. 307-313; J. H. Adler, "World Economic Growth—Retrospect and Prospects," Review of Economics and Statistics, 1956, pp. 273 ff.;

Growth—Retrospect and Prospects," Review of Economics and Statistics, 1956, pp. 273 ff.; A. Eckstein, "Conditions and Prospects for Economic Growth in Communist China," World Politics, 1954-55, Part IV, pp. 434-447; United Nations (ECLA), Analyses and Projections of Economic Development (New York, 1955), pp. 21 ff.; idem (ECAFE), Economic Bulletin for Asia and the Far East (Bangkok), VI (3), 1955, pp. 26 ff. See also Kuznets, op. cit.; H. J. Bruton, "Growth Models and Underdeveloped Countries," Journal of Political Economy, 1953, pp. 326 ff.

12 Current productive power may be used to provide: (a) current consumer goods and services, including leisure; (b) maintenance and/or augmentation of essentially "unproductive" wealth (e.g., patriotic, ecclesiastical, etc., edifices); (c) maintenance of the stock of productive wealth and of the population, together with its skills and capacities; and (d) increments to the stock of productive wealth, to the population's store of skills and capacities, and to the population itself. Only c and d are significant for economic growth, and only use d results in growth. Furthermore, not all resource-uses included under d contribute comparably to the growth of per capita income. Productive power devoted to population growth does not usually increase output per head. Furthermore, productive power incorporated in some forms (e.g., housing, social welfare facilities) may not contribute to long-run income growth as much as productive power used in other ways (e.g., industrial capital, technical training). The importance of capital maintenance derives (e.g., industrial capital, technical training). The importance of capital maintenance derives from the fact that maintenance often is neglected even when the devotion of a given amount of resources to maintenance would keep in use capital that it would cost many

times this amount to replace:

"In many underdeveloped countries, especially the more populous ones, the propensity In many underdeveloped countries, especially the more populous ones, the propensity to save is reportedly in the neighborhood of 5 per cent, or but 0.33-0.5 of that found in advanced countries. It is quite possible, however, that the propensity to save is not much below that found in many advanced countries. On capital formation see Kuznets, op. cit., "Proportion of Capital Formation to National Product," AEA Papers and Proceedings, May, 1952, pp. 507-526, "Economic Growth and Income Equality," ibid., 1955, pp.1-28, and "International Differences in Capital Formation and Financing," in M. Abramovitz, ed., Capital Formation and Economic Growth (Princeton, 1955). Circumstances governing capital formation are discussed also by Abramovitz, ibid., pp. 659-667, by F. Modigliani, "Utility Analysis and the Consumption Function," in K. K. Kurihara, Post Keynesian Economics (New Brunswick, 1954), and by M. Friedman, A Theory of the Consumption Function (Princeton, 1957). In this work Friedman shows that income inequality does not make for a high average propensity to save when, as in backward countries, it is permanent rather than transitory in form. On capital formation in a quite underdeveloped country see P. Bauer, West African Trade (Cambridge, 1954), pp. 13 ff., 20-21, 24 ff., 96, 313-314, 335 ff. 96, 313-314, 335 ff.

mobilizing institutions; and it may make for favoritism of forms of enterprise (e.g., corporate instead of cottage industry) that are suited to augment the rate of capital formation, thereby strengthening the tendency of underdeveloped countries to introduce advanced methods even though they involve relatively high capital-labor ratios.<sup>15</sup> It also lends support to a current view that, when a country has established the necessary economic, political, and social preconditions for economic growth, a relatively small increase in its rate of capital formation, from a low (say 5 per cent of national income) to a relatively high (say 10 per cent or more) level, will, if maintained and if accompanied by the establishment of one or more substantial manufacturing sectors, enable that country to take off into self-sustaining (and for a time accelerating) growth. 16 The direct significance of capital formation for economic growth is exaggerated in that the elasticity of productivity of capital appears to be relatively low and probably decreasing and that a considerable part of the seeming contribution of capital (as of labor) is attributable to technical progress, even as Veblen once observed.17

When economies are open, there may flow in from abroad capital and immigrants (together with know-how) or foodstuffs, receipt of which may release resources for capital production. Usually it is capital equipment that flows into populous underdeveloped countries and capital equipment and immigrants that enter more sparsely settled countries. The amount of equipment obtainable from abroad is unlimited in the absence of economic constraints; witness the amounts imported into strategic areas by the armed forces. But financial and other constraints exist. First, when, given prospective returns on new

18 While recourse to advanced methods usually absorbs large amounts of capital relatively to the labor employed, firms using these methods are likely to realize comparatively large returns above variable expenses and hence to be able to form capital at relatively high rates. Of course, labor employed in other activities will initially have at its disposal relatively less capital than it would have had had the firms in question used less advanced methods. On labor conditions and other circumstances causing developing countries to adopt methods which, being most advanced, are least prone to obsolescence, see M. Frankel, "Obsolescence and Technological Change," American Economic Review, 1955, pp. 296-319, and ibid., 1956, pp. 646-655; R. L. Meier, Science and Economic Development (New York, 1956); A. Gerschenkron, "Economic Backwardness in Historical Perspective," in B. F. Hoselitz, ed., Progress of Underdeveloped Areas (Chicago, 1952), pp. 5-9. The argument for the use of modern technology is effectively presented by W. Galenson and H. Leibenstein, "Investment Criteria, Productivity, and Economic Development," Quarterly Journal of Economics, 1955, pp. 343-370.

10 See W. W. Rostow, "The Take-off into Self-sustained Growth," Economic Journal, 1956, pp. 25-48. As E. Domar has shown, in a growing society replacement falls far short of depreciation; an increase in the rate of capital formation initially serves to increase a society's productive power relatively more than the reported increase in capital implies. See "Depreciation, Replacement and Growth," Economic Journal, 1953, pp. 1-32; also R. Eisner, "Depreciation Allowances, Replacement Requirements and Growth," American Economic Review, 1952, pp. 821-831.

11 See The Place of Science in Modern Civilisation (New York, 1919), pp. 324-386. On the elasticity of the productivity of capital see papers by Olson, Tinbergen, and Valvanis-Vail, cited in note 20; also G. Tintner, Econometrics (New York, 1952), pp. 52-57. vanced methods. On labor conditions and other circumstances causing developing countries

52-57.

investments, service charges on past investment approximate current new investment, the importation of equipment and related resources is limited by the excess of foreign sales over the purchase of foreign consumables. Second, the economic utilizability of imported equipment may be conditioned by the complementary agents domestically available for combination with this equipment. These limits are not rigidly-fixed, however. The amount of foreign exchange to be had may be increased, for example, even in the absence of efforts to establish optimum tariffs, by appropriately modifying the exchange rate and/or the domestic price structure, with the result that domestic products replace imports and/or that the gross value of foreign sales is increased. The availability of complements to foreign products is subject to considerable variability on both technological and economic grounds.

Connection with the world market may affect an economy's growth variously. Its rate of growth may or may not be seriously affected by what happens in countries with which it trades. Balance-of-payments difficulties may arise in an underdeveloped country, however, if both its income elasticity of demand for imports does not fall sufficiently when its output and exports rise and the developed countries with which it trades experience sufficient declines in their propensities to import as their incomes rise. In consequence, growth-affecting changes may ensue. That such difficulties need not rise, however, is suggested by Bruton, who finds that, given reported elasticities, productivity advances in the United States and similar countries benefit underdeveloped countries. When balance-of-payments difficulties do arise. they flow immediately from an excess of expenditures over income. The imbalance may be corrected, therefore, by decreasing expenditure, by increasing exports, or by substituting domestic products for imports, account being taken of the level of employment, etc.18

2. Applied technology is of greater importance for long-run per capita economic growth than is any physical agent. 19 Various attempts

increasable at any time up to some then attainable maximum just as is any other form

of output; it varies with resource-allocation just as does any other output.

<sup>&</sup>lt;sup>18</sup> See symposium in Bulletin of Oxford Institute of Statistics, 1955, pp. 1-88; H. J. Bruton, "Productivity, the Trade Balance and the Terms of Trade," Economia International Economy," Canadian Journal of Economics and Political Science, 1953, pp. 478-500, and his forthcoming "Sketch of a Generalization of Keynesian Balance-of-Payments Theory"; W. M. Corden, "Economic Expansion and International Trade," Oxford Economic Papers, 1956, pp. 223-228. H. Brems finds that when two economies of different potentiality are joined through exchange, under certain conditions, they eventually grow at similar rates. See "The Foreign Trade Accelerator and the International Transmission of Growth," Econometrica, 1956, pp. 223-238. But see J. M. Letiche, "Differential Rates of Productivity Growth and International Imbalance," Quarterly Journal of Economics, 1955, pp. 371-401, and J. C. Ingram, "Capital Imports and the Balance of Payments," Southern Economic Journal, 1956, pp. 411-425.

Technology, in the sense of power to introduce production functions of the sort previously impossible, is, of course, the product of certain kinds of labor and other resources having been combined in certain ways. The output of technological progress is therefore increasable at any time up to some then attainable maximum just as is any other form

to measure that which does not admit of precise measurement namely, the contributions through time, respectively, of technological change and increases in the stock of physical agents—suggest that in the United States technical progress, as distinguished from increase in resource input, has accounted for about one-half of the increase in output experienced since 1869, and that elsewhere, too, it has contributed greatly to increase in output.20

Technical progress is looked upon as a precondition to growth under various conditions. It may be a prerequisite to continuation of increase in both the capital-labor ratio and output per head, and it is essential to the prevention of too marked a decline in the marginal productivity of capital.<sup>21</sup> It is also considered essential to the persistence of equilibrium growth in Harrod and similar senses.22 It may conduce to growth by increasing obsolescence and therewith aggregate demand or by increasing the propensity to spend.23 It is requisite to the adaptation of the capital supply of underdeveloped countries to their particular resource endowments.24 Directed technical progress may enable both advanced and underdeveloped countries to overcome some of the fixities, inflexibilities, and discontinuities whence instability, unemployment, and inflation issue. In the absence of great technological modernization, it is hardly to be expected that per capita income in underdeveloped countries can be made to rise so rapidly as that of the world at large.25

<sup>20</sup> See M. Abramovitz, Resource and Output Trends in the United States Since 1870, NBER Occasional Paper 52, New York, 1956; J. W. Kendrick, Productivity Trends: Capital and Labor, NBER Occasional Paper 53, New York, 1956; also S. Fabricant, "Economic Progress and Economic Change" (34th Annual NBER report, 1954, based on NBER studies of productivity in various sectors of the American economy). See also Jacob Schmookler, "The Changing Efficiency of the American Economy, 1869-1938," Review of Economics and Statistics, 1952, pp. 214-231; S. Valavanis-Vail, "An Econometric Model of Growth: U.S.A. 1869-1953," AEA Papers and Proceedings, May, 1955, p. 217; E. C. Olson, "Factors Affecting International Differences in Production," ibid., 1948, pp. 502-522; J. Tinbergen, "Zur Theorie der langfristigen Wirtschaftsentwicklung," Weltwirtschaftliches Archiv, 1942, pp. 511-545.

"On the former point see H. D. Dickinson, "A Note on Dynamic Economics," Review of Economic Studies, 1954-55, pp. 169-179; on the latter, W. Fellner, Trends and Cycles in Economic Activity (New York, 1956), especially Chap. 8. See also Robinson, op. cit., Chaps. 8-9, 14, 18.

Chaps. 8-9, 14, 18.

<sup>22</sup> H. J. Bruton, "Innovations and Equilibrium Growth," *Economic Journal*, 1956, pp. 455-466. Bruton supposes disturbances attributable to invention and innovation to be overriden by their equilibrating influences. Cp. A. Maddison who finds in the unevenness of the incidence of technical change a source of instability. See "Productivity in an Expanding Economy," *ibid.*, 1952, pp. 584-594.

<sup>23</sup> Whereas P. Figner stresses the demand-increasing effect of technical progress, H. R.

panding Economy," ibid., 1952, pp. 584-594.

<sup>23</sup> Whereas R. Eisner stresses the demand-increasing effect of technical progress, H. R. Bowen draws attention to obstacles to the emergence of this effect. See "Technological Change and Aggregate Demand," American Economic Review, 1956, pp. 92-105, and Bowen's article, of the same title, ibid., 1954, pp. 917-921. J. Duesenberry concludes that innovation has "relatively little effect on aggregate consumer expenditure" and, on balance, will not increase the excess of real investment over business saving. See "Innovation and Growth," AEA Papers and Proceedings, May, 1956, pp. 134-141. See also H. Apel, "Growth Trends in Production, Consumption, and Investment," Social Research, 1956, pp. 132 ff. 144, 140, 150.

pp. 132 ff., 144, 149-150.

\*\*See Bruton, "Growth Models . . . ," loc. cit., pp. 327 ff., 331 ff.

\*\*See B. Higgins, "Economic Development of Underdeveloped Areas," Ekonomi dan

Because of the significance of technical progress for income growth generally and because some find in it also a precondition to the avoidance by advanced economies of deficiency in aggregate demand and hence of eventual stagnation and/or underemployment,26 it becomes important to know what conditions make for technical progress and to establish such conditions. These conditions are of two sorts: those generative of invention and those conducive to the introduction and application of invention. Both sorts are always of concern to advanced countries; in underdeveloped countries at present the latter sort is of major concern. These conditions may be divided also into those which are extrafirm and those which are intrafirm, it being recognized, of course, that this distinction is arbitrary in that some conditions may be situated either within or outside firms. Most important of the extrafirm conditions is the extent to which pure and applied science is "in the air," supported and exploited by governmental and nonprofit-seeking establishments, and giving stimulus to inventiveness. Important also are the price, cost, and demand prospects confronting firms. Among the most important of the favorable intrafirm conditions is the presence of suitable combinations of capacity to finance potential innovations with transitoriness of opportunity to derive gain therefrom. Of the progress-producing conditions, more are properly situated outside than inside firms in underdeveloped than in developed countries, inasmuch as but few firms operating and selling principally in backward areas can rationally incur all the overhead outlays required for initiating, adapting, and introducing improvements in an amount optimal from the collective point of view. For this reason backward countries usually stand to benefit from the presence of firms which can draw upon technological resources located and supported abroad.27

effort-stimulating force.

Ton this last point see Edith Penrose, "Foreign Investment and the Growth of the Firm," Economic Journal, 1956, pp. 220-235. On the beneficial aspects of monopoly see G. C. Allen, "A Note on Monopoly and Economic Progress," Economica, 1953, pp. 359-361, and papers cited; A. Hunter, "The Monopolies Commission and Economic Welfare," Manchester School, 1955, pp. 31-37. L. J. Zimmerman, The Propensity to Monopolize (Amsterdam, 1952), pp. 29-31. On the adverse effects of molopoly, e.g., see J. Schmookler, "Invention, Innovation, and Competition," Southern Economic Journal, 1954, pp. 380-385; Robinson, op. cit., p. 407. A. Harbarger's argument suggests, however, that even when firms are large enough to finance longer run improvements, there may not be great

keuangan Indonesia, 1954, pp. 19 ff. In this paper the many political, economic, and social obstacles to development in backward countries are described; they appear to be much greater than those encountered in the West 150 years ago.

To For criticism of the view that technical progress can suffice to prevent stagnation see B. Higgins, "Interactions of Cycles and Trends," Economic Journal, 1955, pp. 604 ff. Aspects of this thesis are treated by Robinson, of. cit., pasim, and by A. Murad, "Net Investment and Industrial Progress," in Kurikara, of. cit. See also Apel, of. cit., pp. 127-150, who inquires whether consumption will expand rapidly enough to absorb that part of a rapidly growing gross national product which is not absorbed by investment and maintenance. On American consumption trends see Ruth P. Mack, "Trends in American Consumption and the Aspiration to Consume," AEA Papers and Proceedings, May, 1956, pp. 55-68, and Elizabeth W. Gilboy, "Elasticity, Consumption and Economic Growth," ibid., pp. 119-133. Dr. Mack finds consumption to have been a dynamic, effort-stimulating force. effort-stimulating force.

#### II. Allocative Mechanisms

While the literature relating to economic growth sometimes underestimates the allocative effectiveness of the price system and overestimates the amount of inflexibility present in underdeveloped economies, it remains true that the resource allocation to which the price system gives rise in such countries makes for less growth than is realizable, even at little cost in terms of current welfare, when the price system is appropriately interfered with. 28 Of greatest significance are the division of productive power between consumption and investment and the allocation of resources within the investment sector proper.

Respecting the rate of capital formation in underdeveloped countries a number of conclusions are coming to be accepted. Because increments in agricultural and certain other forms of capital tend to be underestimated, the capital-forming power of underdeveloped countries usually is understated. It is through induced shifts in the supply curve of savings rather than through increases in the interest rate that capital formation may be significantly augmented. These shifts are to be accomplished through the spread of institutions and conditions that mobilize savings, especially such as accompany increases in income, through taxation that does not diminish private savings, and through the channeling of foreign exchange into the investment sector and at prices correctly reflecting its scarcity (or its resource cost when relevant). Inflation is not considered a satisfactory source of savings, even though inflation frequently has accompanied development, particularly after the supply of limitational factors has become inelastic. For the appropriateness of factor allocation tends to be interfered with, first, by the hoarding and other responses initially made to inflation and then by the multiplicity of controls that follow in the wake of inflation after increments in purchasing power have been redistributed and prices, coupled with the elasticity of price expectations, have risen.<sup>29</sup>

monopoly power. See "Monopoly and Resource Allocation," AEA Papers and Proceedings.

May, 1954, pp. 77-87.

May, 1954, pp. 77-87.

On the adverse effects of inappropriate interferences see Peter Bauer, West African Trade (Cambridge, 1954), and "The Economic Development of Nigeria," Journal of Nigeria, "Journal of Nigeria," Journal of Nigeria, "Adder's reply,"

Trade (Cambridge, 1954), and "The Economic Development of Nigeria," Journal of Political Economy, 1955, pp. 298-311, together with his comments on J. H. Adler's reply, ibid., 1956, pp. 435-441. That economists tend to underestimate flexibility, elasticity, etc., is suggested by E. V. Morgan, in "The Theory of Flexible Exchange Rates," American Economic Review, 1955, pp. 279-295.

E.g., see Buchanan and Ellis, op. cit., Chaps. 14-15; Fellner, op. cit., pp. 168-171, 286 ff.; IMF report, Economic Development with Stability (Washington, 1953); S. H. Axelrod, "Inflation and the Development of Underdeveloped Areas," Review of Economics and Statistics, 1954, pp. 334-338; M. Bronfenbrenner, "The High Cost of Economic Development," Land Economics, 1953, pp. 211-218; T. A. F. Noble, "Economic Progress in Underdeveloped Areas," Scottish Journal of Political Economy, 1956, pp. 102-105. It is also being urged that inflation did not contribute so greatly to capital formation in the past as has been assumed. E.g., see R. A. Kessel, "Inflation-caused Wealth Redistribution," American Economic Review, 1956, pp. 128-141; D. Felix, "Price Inflation and Industrial Growth: the Historic Record and Contemporary Analogies," Quarterly Journal of Economics, 1956, pp. 141-163; E. H. Phelps Erown and S. A. Ozga, "Economic Growth and the Price Level," Economic Journal, 1955, pp. 1-18.

It is recognized, however, that since economic development requires -more money and other financial assets than are to be had through selffinance and direct finance, economic growth is a proper objective of monetary policy, and there is a growing need in developing economies for financial intermediaries to channel funds from organizations with surpluses to organizations with deficits. 30 It is expected, furthermore, that current growth aspirations and policy assumptions, together with prospective institutional developments, will press prices upward, with unsatisfied demand dominating prices in underdeveloped countries and with rising labor costs swamping technological advance in developed countries.81

Underdeveloped economies appear to be less flexible than developed economies, though probably more flexible than many recent studies imply. Discontinuities in the combinability of labor with other resources appear to be more common than in developed countries; and there appear to be fewer processes and hence less opportunity for varying the proportions in which labor may be combined with complexes of complementary agents of production. In consequence, underdeveloped economies are less sensitive to price variation and may be more prone to unemployment.32 It has also been found that when key parameters in Domar-Harrod growth models—e.g., average propensity to consume, output-capital ratio, labor-force growth rate—are variant instead of invariant, the tendencies to instability and unemployment present in such models are greatly reduced; but the full empirical significance of this for planning in underdeveloped countries remains to be established.33

For these and other reasons it is supposed that the price system is less capable in underdeveloped than in developed countries of produc-

20, op. cit., pp. 581-634.

"See R. M. Solow, "A Contribution to the Theory of Economic Growth," Quarterly Journal of Economics, 1956, pp. 65-94; K. E. Boulding, "In Defense of Statics," ibid., 1955, pp. 492-495. For other circumstances operating to reduce instability in growth models, see H. Brems, "Stability and Growth," Economic Journal, 1955, pp. 615-625, especially p. 625; D. Bodenborn, "The Stability of Growth Models," American Economic Review, 1956, pp. 607-631.

E.g., see J. G. Gurley and E. S. Shaw, "Financial Aspects of Economic Development," American Economic Review, 1955, pp. 515-538; W. L. Smith, "On the Effectiveness of Monetary Policy," ibid., 1956, pp. 600-606; C. R. Whittlesey, "Relation of Money to Growth," ibid., May, 1956, pp. 188-201; J. H. Adlar, "The Fiscal and Monetary Implementation of Development Programs," ibid., May, 1952, pp. 592-600.

"See Fellner, op. cit., pp. 230-236; M. Bronfembrenner, "The Appeal of Confiscation in Economic Development," Economic Development and Cultural Change, 1955, pp. 201-218; also my "Wage-price Movements and Old-age Security," in I. L. Webber, ed., Aging: A Current Appraisal (Gainesville, Fla., 1956), pp. 105-119.

"See R. S. Eckhaus, "The Factor Proportions Problem in Underdeveloped Areas," American Economic Review, 1955, pp. 539-565; H. B. Chenery, "The Role of Industrialization in Development Programs," ibid., May, pp. 40-56; M. Fukuoka, "Full Employment and Constant Coefficients of Production," Quarterly Journal of Economics, 1955, pp. 2344; V. E. Smith, "Continuous and Discontinuous Factor Substitution," Southern Economic Journal, 1955, pp. 189-201. See also A. Lowe's paper in M. Abramovitz, ed., op. cit., pp. 581-634.

ing an optimal allocation of resources destined for investment. Development entails more than incremental variations. In backward economies it involves large magnitudes, significant discontinuities, complexes of projects, overheads beyond the capacity of private entrepreneurs, new technologies, external economies, a price structure different from that obtaining before economic development has gotten under way, and so on.34 It also entails giving sufficient impetus to that Smithian determinant of the degree of division of labor attainable; namely, extent of the market. Such extension was to be achieved through balanced growth, through the simultaneous expansion of sectors which are complementary, and through favoritism of sectors which enhance profitability in other sectors. Yet, as Fleming has shown, mutually supporting diversified development is likely to be experienced only when capital and labor are in elastic supply, when economies of scale are realizable in factor-producing industries, and "when, taken singly, the investments in question are only just not profitable."35

So far, in this section, it has been suggested that the rate of growth to which a free price system would give rise in a backward, underdeveloped country is lower than might be achieved, given appropriate collective intervention. The price system encountered in underdeveloped countries is never wholly free, however. It is subject to distortions, some of indigenous origin, and some introduced from abroad along with foreign know-how, organizational aspirations, tastes, wants, etc. These distortions, in turn, operate to slow down the rate of growth. While the distortions vary concretely from country to country, they have common attributes. In general, particularly when trade-unions have become strong, labor employed in factories is overpriced, with the result that extension of factory methods is checked and continuation of less productive forms of organization is fostered. Both foreign exchange and some of the capital assembled by governments and savings-mobilizing institutions are underpriced, with the result that the current flow of these resources is held down and some of them flow into activities incapable of utilizing them in accordance with their true scarcity value. In agriculture some products are overpriced, whereas others are underpriced, with the result that resources are not properly allocated and that agricultural enterprise is adversely affected on bal-

<sup>28</sup> See Lewis, ibid., pp. 69-78; M. Fleming, "External Economies and the Doctrine of Balanced Growth," *Economic Journal*, 1955, pp. 241-256, especially pp. 254-255; R. Nurkse, *Problems of Capital Formation in Underdeveloped Countries* (New York, 1953), Chap. 1.

<sup>&</sup>lt;sup>34</sup> See B. Higgins, "Development Planning and the Economic Calculus," Social Research, 1956, pp. 35-56; H. B. Chenery and K. S. Kretschmer, "Resource Allocation for Economic Development," Economictica, 1956, pp. 355 ff.; H. W. Arndt, "External Economies in Economic Growth," Economic Record, 1955, pp. 192-214; Lewis, The Theory of Economic Growth, passim.

ance. Similarly, cottage industry may be favored at the expense of factory production. In the field of development proper (i.e., land reclamation, irrigation, etc.), progress is retarded when relatively high prices are assigned to unemployed factors of little or no current alternative use value. Again mistakes in industrial location result when inadequate allowance is made for the eventual impact of newly established firms upon prices and wages in their neighborhoods.

## III. Decision-makers; Environment of Decision

While great importance is attached to the role of the decision-maker and to the environment in which he functions, the literature available remains relatively uninformative concerning the conditions that give rise to growth-generating decision-makers and conduce to their effectiveness.

1. Growth results when agents of production are so combined and transformed into gross national product and this product is so used that its volume increases through time. The role of the decision-maker consists principally in combining and transforming factors and secondarily in determining the use to which the product is put; in effect he accomplishes what the impersonal price system cannot accomplish. The decision-maker may be an individual, several co-operating individuals, or a differentiated group. He may be a private enterpriser; an agent of the state, variously subject to rules of economic conduct; or an undertaker representing a quasi-public collectivity (e.g., a foundation, a trade-union).

The activity of decision-makers can give rise to growth only under certain conditions. If their activity is entirely routine and repetitive, little or no growth per head is to be expected. Growth ultimately presupposes, as Schumpeter suggested in other connections, either transformation of production functions, together with extension of production possibilities, or introduction of new and more attractive finished goods and services. Accordingly, the only decision-makers of importance for economic development are those who introduce improved methods or more attractive products and those who, while somewhat lacking in originating powers, adapt and extend these methods and products throughout an economy.

An economy's rate of growth thus depends in large measure upon its capacity to give rise to innovators and their imitators, to individuals who continually channel new know-how from the laboratory and engineering sectors of the economy to the fields of production and marketing proper. The problem of the underdeveloped country thus becomes immediately one of finding and giving free rein to innovators and imitators, especially the latter, since they may draw upon innovators and imitators in advanced countries and adapt their methods to underdeveloped countries. The task of the historian of economic growth becomes one of discovering what conditions gave rise to innovators and their imitators and what conditions were especially favorable to their activities.

2. The environment of decision and incentive embraces only those elements, aspirations, and conditions which are deemed relevant by the decision-maker and within the framework of which he behaves rationally, though not necessarily in a manner to optimize.36 What a potentially innovating or imitating decision-maker will do, therefore, depends upon the environment of decision within which he finds himself. Accordingly, economic development will depend markedly at any time upon the environment of decision and incentive provided for innovators and their imitators, even though this environment at all times reflects in some degree the activities of past and contemporary innovators and imitators. Because this environment includes many elements, of diverse and changing importance, it cannot here be analyzed in detail. Among these elements must be included the state of the arts, together with the degree to which they are diffused through the population; the prevailing monetary, tax, and fiscal systems; the talentrecruitment system and the reward system; the land-holding and the property systems; those aspects of the legal system which condition the form and the behavior of decision-making organizations. Also to be included are such predominantly economic elements as price, income, and market structures; the disposition of the state to assume responsibility for various socioeconomic cverheads and, subject to specified conditions, for the maintenance of aggregate demand.

While the state can contribute in many specific ways to economic development, 37 most of its positive contributions consist in establishing an environment of decision and incentive that conduces to growth and that brings the marginal social cost and the marginal social benefit of development, appropriately determined, into balance. Since the amount of effort put forth by innovating and imitating decision-makers, along with the channels into which it is directed, depends upon the environment of decision, the state, in virtue of its capacity to shape many elements in this environment, can appreciably affect the course of

Part III.

<sup>&</sup>lt;sup>28</sup> E.g., see H. A. Simon, "Rational Choice and the Structure of the Environment," Psychological Review, 1956, pp. 129 ff., and "A Behavioral Model of Rational Choice," Quarterly Journal of Economics, 1955, pp. 99 ff.; also Harbison, op. cit., especially pp. 374 ff. See also Y. Brozen, "Business Leadership and Technological Change," American Journal of Economics and Sociology, 1954-55, pp. 13-30 and papers cited; and Abramcvitz, ed., op. cit., Parts III-V.

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S. Kuznets, et al., Economic Growth: Brazil, India, Japan (Durham, 1955),

economic growth. Moreover, in view of what has been said in Section II, considerable but appropriate intervention by the state is essential in most if not all underdeveloped countries if they are to develop.

# IV. Neglected Factors

Having treated of the growth-affecting factors stressed in current literature, I shall enumerate aspects of development theory which tend to be neglected.

- 1. Little attention is given the welfare content of economic development, together with such specific matters as the weight to be assigned consumer's sovereignty and freedom of choice, the implications of the genesis and the degree of stability of indifference maps, the selection of discount rates, etc.
- 2. How best to represent growth quantitatively, whether with one or many indices, is similarly neglected.
- 3. Causal analysis of economic development frequently is defective in that the role of relevant intervening variables is ignored.
- 4. Only infrequently is the effect of investment upon future natality and natural increase included among investment criteria, even though a 1 per cent rate of population growth typically offsets a 3-5 per cent savings rate, and diminution of natural increase is essential in most underdeveloped countries if their incomes per capita are to continue to rise appreciably.
- 5. The significance of a country's size for its development in a world shot through with trade barriers usually is passed over, even though domestic markets tend to be more extensive, and independence of foreign markets tends to be greater, in a large than in a small underdeveloped country.
- 6. A country's situation in world economic space is similarly neglected, even though the impact which a country receives from abroad varies inversely, much as does the impact it has on other countries, with some root of the distance intervening between it and countries which it affects or is affected by.
- 7. Exponents of stagnation theories fail to allow adequately for state intervention, given which, these theories probably lose much of the validity they might have in the absence of such intervention.

#### DISCUSSION

JOHN M. HUNTER: This will be confined to economic growth and development in those countries now commonly referred to as underdeveloped. The fact that I feel constrained to do so—and others frequently so limit themselves—provides the basis for my first comment.

The state of affairs in the "theory of economic development" is such that the theory we have is usually considered applicable to underdeveloped or to developed economies but not to both. There are three primary reasons for this: (1) The first is very pragmatic and concerns the nature and availability of data. The research and analysis that is possible with the data in the more advanced countries takes an entirely different character from that possible with the data available in less advanced countries. I recently had the opportunity to participate in the estimation of national income data for one such country. The most important item-rice production-was estimated by crude guesses as to the average annual per capita consumption of rice multiplied by a rough guess as to population. Adding legal (i.e., known) exports gave a physical production figure, and only the crudest kind of guess could be made as to the average price at the farm. Empirical use of modern economic theoretical devices with such data is ludicrous. Even time series are of doubtful utility; computed ratios of taxes to national income, output to capital, ratios of national income to capital stock have practically no significance. (2) Economists have been unnecessarily reluctant to apply theory across these international and intercultural boundaries because of the anticipated criticisms of other social scientists. There is no denying that these economies are not transplanted "Western" economies, that they exist in different cultural and social environments, and that the assumptions economists make in the West may not be fully applicable—or as fully applicable—in these different situations. The economics of black markets and of tax incidence—to cite only two examples—was useful in the two underdeveloped countries in which I have lived and worked. For operational purposes, however, aggregative tools seem less well suited. There may be more universal truths than some economists suspect; there are more of these cases than some of our colleagues in other social sciences give credit for. (3) The most important reason for the distinction between the economics of developed and underdeveloped economies is the differences in environments.

Reference to "preconditions" of economic development is frequently found in the literature. Professor Hoselitz uses the term "general environmental conditions" and Professor Spengler, "necessary economic, political and social preconditions." These variously include such items as the need for a generally educated population, an adequate banking system, an adequate transportation system, the necessity for land reform, an adequate legal structure, etc. The treatment of such factors as noneconomic, as the term preconditions seems to imply, leaves the resultant economic theory extremely sterile because of the overwhelming importance in the real live world of these non-

economic factors. If these factors are, on the other hand, regarded as a part of the process of economic development, they are usually attacked on an ad hoc basis without attempting to develop or to apply any general theory of economic development. For example, there is no general theory of economic development which pretends to include how land reform is accomplished or how political stability is achieved as a part of economic development; yet there is general agreement that such are either an essential part of economic development or that they are necessary preconcitions of it. Any attempts to fit such factors into a general theoretical structure will require a massive, co-ordinated assault of all the social sciences. Those who have had an opportunity to participate in a truly interdisciplinary approach to this particular problem realize how little is known about the process of development and how far we are from even the beginnings of a generalized explanation of it.

My second comment is closely related and also is related to the topics assigned to both the principal papers in this session. The differentiation between economic and noneconomic factors may at times have considerable usefulness; but in the problem of economic development, the desirability of making such a distinction is doubtful.

Economic development is essentially a historical process; and when we plot economic development, we are attempting to rewrite, in advance, the economic histories indeed, the entire histories of the areas with which we are concerned. This, alone, should give rise to considerable humility. Economic development, as a historical process, takes place over time. Long periods—decades rather than months and years—are required to bring about the kinds of changes sought. Viewed thus, the usual dichotomy between economic and noneconomic factors in most cases disappears. Several briefly stated examples will illustrate. (1) Asian anti- or nonmaterialism, referred to by Professor Hoselitz, may for purposes of short-run policy be accepted as psychosociological data and as given. (I have some doubts even of this because of a rather strong impression that this is the philosophy among the "haves" rather than the much more numerous "have-nots.") It may be argued that much of this philosophy is a rationalization of the eons of economic misery and that given the knowledge of better things and given some hope and given some means of achieving a more material way of life, much of the "immutable" antimaterialism attributed to the Orient would collapse. To the extent this supposition is correct, this phenomenon is a result of the economic environment and hence cannot be left aside in dealing with economic development. (2) A higher level of education is frequently referred to as a precondition or noneconomic factor. But, current levels of education are surely a function of levels of national income cirectly. The familiarity with things mechanical—so much taken for granted in our economy and so important for industrialization—is also a function of the level of living and a part of the level of informal education. More obvious, paying for education is a problem in public finance to be considered along with all other developmental expenditures. Further, the level of education is a determinant of product and factor market structures as it affects the dissemination of market information through mass communications media. Finally, types of education

(e.g., classical versus technical) are very much of concern to the economist interested in economic development. (3) Appropriate financial arrangements are frequently cited as necessary preconditions to economic development. For the most part, these institutions have developed in the past as the situation required and permitted. Professor Hoselitz seems to so argue. Only in a completely directed economy can one imagine financial institutions developing chronologically before any need for them was demonstrated and developing independently of that need. The same can be said—but with semewhat less certainty—about the development of transportation systems.

My case is probably overstated by these examples. There are certainly extreme instances where the influences are properly considered as noneconomic: religious beliefs requiring human sacrifice is an example. But I urge that many of the factors properly considered noneconomic in the short period may not properly be so considered when economic development is viewed—as it should be—as a long-run phenomenon. This is not a criticism of the main argument of Professor Hoselitz' paper. Our difference is largely one of semantics. Most of his analysis deals with "general environmental conditions" which must be created in the "pre-take-off phase" of economic development. To the extent that he equates the take-off phase itself to economic development, then whatever happens in the preceding phase may be said to be noneconomic. Professor Spengler does the same thing in inadvertently using "economic development" and "growth" synonymously.

Even though these differences are largely terminological, there is some danger from the confusion and even more danger in the viewpoint from which they have resulted. Using this kind of distinction to separate economic from noneconomic factors results in an abdication of an area of interest of considerable importance to economics in the past and one which ought to continue to be of concern. The abdication does not assure that these problems will be dealt with by another discipline; nor does it assure an improvement in the level of competency if they are. Professor Spengler puts this in extreme form when he says: "In backward countries, exogenous or noneconomic factors exercise relatively most influence; the autonomy of an economic system as such increases as the society including it progresses, and therewith the applicability of economic theory." Denying responsibility because problems are not susceptible to treatment by existing theory is not a very valiant way to define the limits of the discipline or to push back the frontiers. There is yet a further difference evidenced in his footnote 1 in which the difference between economic and noneconomic variables is tied to their identification in the short run. Finally, the development of theory which either ignores or assumes away the noneconomic factors may lead to wholly unrealistic, impossible, and/or undesirable policy conclusions. Development of such theory is of course desirable, provided that those who develop it and those who use it know that it may not be applicable to any particular situation.

There are two other closely related points concerned with the tendency to regard economic development in the short run. The first of these concerns the role of government and the second, welfare considerations.

1. Promulgating five-year plans is perhaps desirable, but such plans should be fitted into previously developed fifty-year plans. The objectives of a fiftyyear plan and the means of achieving those objectives would probably be considerably different than those one would find if he could somehow sum the objectives and methods of ten consecutive five-year plans. There are two reasons for this: First, five-year plans are apt to be closely allied to the objectives of present governments continuing in power. The program of a government seeking to perpetuate itself without clearly defined and widely disseminated objectives would likely behave in a different manner from one with the same "continuity" objectives but which was committed to the accomplishment of announced, well-defined, long-range national objectives. Second, more fundamentally, five-year plans operate in so short a period that little succor can be sought through encouraging the dissolution of the caste system, raising the level of education, land reform, etc. These and other factors may be neglected to achieve quick, short-run results when they might ultimately be more productive.

Professor Spengler concludes that governmental intervention is desirable because the rate of growth achievable under free market conditions, modified with various imperfections, is less than that theoretically possible. This conclusion does not necessarily follow. In the first place, it assumes that the intervening government is sufficiently responsive to the welfare needs of the people, that it is sufficiently wise and sophisticated, and that it is sufficiently staffed to act "appropriately." None of these conditions may be met. Friends in public administration inform me that it is not legitimate to oppose a policy on the grounds that it might be badly administered. Of so arguing, I am willing to stand convicted. Second, the cost of this intervention may be unduly high in terms of manpower. Responsible governmental officials are innovators and administrators, and a serious shortage of such persons exists for the development of the business and industrial sectors of the economy. Tax reforms, multiple exchange rates, governmentally supplied agricultural credit, etc., would increase the drain of the existing supply of people capable of serving either function. This consideration adds a cost not frequently reckoned with in the United States because its significance is much smaller.

2. In the long run, the welfare objectives of economic development become much more critical. The best statement that I know regarding the components of economic welfare are Professor Jan Tirbergen's International Economic Co-operation (New York: Elsevier, 1946, page 106). According to him, economic welfare is maximized when production is maximized, maximum equality in the distribution of income is achieved, maximum economic freedom is obtained, maximum stability is obtained, and minimum of conflict is involved. These are to some extent mutually incensistent, and there is a good deal of supposition involved. Defined in terms of some complex of these components, the objectives of a long-range program may be substantially different than if they are ignored or even if they are considered in short-run programs. For example, increasing taxes in a regressive structure to finance Development Project X might be justifiable in the short run, as the increase in output would more than compensate for the increase in inequality in the

distribution of incomes. But if this tax remains in force after the project is financed, then the project may reduce rather than increase economic welfare in the long period. A great deal yet needs to be done, as Professor Spengler has indicated, in this area.

In summary, there are two principal points: (1) The distinction between economic and noneconomic factors in economic development has been noted as not very useful. Attempting to make this distinction leads one into a consideration of economic development as a short-run phenomenon (or rather a whole series of short-run phenomena) or to consider only a part of the historical process; namely, the take-off phase. I regard both as unfortunate. (2) The pre-take-off phase has received much too little emphasis from economists because of the tendency to regard much that happens in it as noneconomic. Perhaps we need in this area an expansion of Professor Nurkse's "balanced growth" to include such things as financial arrangements, improved levels of education, changed social attitudes, and increased political sophistication. Perhaps "balanced evolution" is a better term.

Howard M. Teaf, Jr.: For the past five years I have been involved in the home office supervision of technical co-operation and community development projects in India and the Near East and have visited some of them. All who are close to such projects are intensely aware of the fact that their struggle to raise the level of economic welfare is bound up with a great noneconomic complex. Yet, even if the economics of each situation is clear (which is not always the case), the noneconomic aspects are at best little understood.

The noneconomic may be limitations to development on top of economic limitations; on the other hand, they may be the means of approach to purely economic problems. In any case, the technicians and "experts" we send over, however at home in their specialties, commonly find themselves aware of a host of psychological, sociological, cultural, and political problems with which they must deal and for which there is not much in the way of practical guidance. A resident representative of the United Nations Technical Assistance Board has said: "We are expected to be a combination of genius and angel, and what do we have to offer that they, and we, can rely upon? There is no guidebook, no manual. All of us are playing by ear."

So as I read Professor Hoselitz' paper I kept thinking of applications of his thesis to the narrower field of community development. Are his suggestions amenable to rewriting in such a way that they would provide, to the thousands of workers in the field of technical co-operation, guidance or at least a few clues for effecting the same "over the hump" result with which Professor Hoselitz deals? I was, if you please, trying to move from his macro analysis to a micro application.

There are several respects in which Professor Hoselitz' ideas are directly related to the local situation.

Local Entrepreneurship and Capital Accumulation. Nearly everywhere there is concern about the ability of indigenous organizations to take over innovations and so perpetuate the improvements started by the outsiders. This is

not just a matter of the host government taking up the development program. More fundamental are such questions as: Who will continue the textile marketing or the raw material purchasing functions? Who will assume responsibility for continuing the machinery operating service? Who will continue to manufacture and sell that new-type latrine?

Where there has been a quasi-feudal system and even where there has been a strong family system, the exploitative nature of existing entrepreneurship is one of the social elements marked for reform. Much has been written about the necessity of organizing communities for assuming responsibility. And there are those who look to co-operatives as a near-universal answer. But how do you do this where there is no tradition of associative effort, where even within the extended family economic effort is highly individualized, where mukhtars or family heads are power elements without a sense of representation or responsibility, where there is unwillingness to undertake even individual entrepreneurship except in the traditional handicrafts?

Some examples: An agricultural development project in an Arab village in Israel tried for three years to organize the community to take over the ownership and operation of certain equipment. A young Arab from the village had been trained to operate and maintain the equipment; there was general recognition of the superiority of machine cultivation and great demand for services of the equipment. But the project finally was closed down because of the inability to find or to set up any committee, co-operative, or other organization to take over.

On the other hand, in an Indian village where a weavers' co-operative had been a failure, the staff of a community development project started joint functions, without a co-operative organization, including purchasing, dyeing, designing, and marketing—even including group prayers and discussion. Gradually the weavers came to the point of joint accumulation of savings. (The first joint bank account was opened in the name of the Weavers' God.) Then co-operative organization was undertaken.

But in the same community, after the project had designed an inexpensive sanitary latrine, secured its acceptance by families in villages in the area, and trained several young men to manufacture it, it was found impossible to persuade one of the trainees to go into business for himself, even producing for an assured market.

It is apparent that our representatives in technical co-operation projects are still playing by ear. But it seems to me that they would be helped tremendously by further research in the genesis of local organizations for entrepreneurship. A good deal of study has been directed in recent years to the institution of entrepreneurship in this country. But we have only scratched the surface in the examination of its sociological, cultural, and psychological aspects. To be of value to those who are working in other cultural environments, there must be comparative studies, extending what we know of Western entrepreneurial institutions to other applications. For example, Arab countries have an institution known as the waqf, a trusteeship usually associated with religious or educational purposes. It might not be difficult to build on this idea to provide an acceptable institution for joint capital ac-

cumulation and enterprise. Aramco in Saudi Arabia has already used this form, familiar to the Arabs, as a means of operating what was to the Arabs a suspected novelty—a workmen's compensation insurance fund.

Finding and Using the Deviants. Almost all community development projects repeatedly report difficulties in uncovering those individuals who would be willing to make the first break with past practices—the potential deviants. Professor Hoselitz has discussed the marginality of certain groups, as leading to deviation, and the sanctions against deviation.

How does the forced-draft development program see these phenomena in the local community microcosm? First of all, there is a tendency—chiefly among assisters from outside—toward frustration or resentment because patently good ideas are not quickly accepted. It is difficult for the outsider to appreciate the identification of host-country individuals, particularly leaders, with their system. A United Nations expert in public administration, working in Afghanistan, wrote:

They identify themselves out of pride and out of vanity with the system they are working under. That heightens their evaluation of themselves. Thus they are hostile to any derogatory judgment applicable to that system. If they accepted the judgment their position would be diminished in their own eyes. If one tells them that what they know and what they are working with are not worth very much, they are deeply moved, not in their knowledge, but in their personality.

It is asking a lot to expect individuals or even substantial groups to hazard a break from their accepted value systems, yet it is the essential purpose of a development program to accomplish, or at least to hasten, such a break.

Given a group of individual deviants, how can their influence be extended? If they are a marginal group, they have little influence in the main social group. If they are part of the main group, there is a danger that their new outlook will separate them from the others, so that they lose influence. This suggests that the development project must either find a way of attaching prestige to the deviation, or a way of implanting the deviant idea in a group that already enjoys prestige—an elite.

An interesting suggestion is that the youth who have received some of their education outside the community—in some ways a marginal group—are natural prospects for deviation and that their ideas may have subtle influence upon their elders, even though the latter may affect a deprecatory attitude. Such youth may be an effective nucleus from which to reach the whole community, but extreme care must be taken in using them. Some of these young people—in fact, those most open to the new ideas—may have grown too far apart from the community or in other ways alienated themselves, as the "Useems" have pointed out. To use them as a point of access to the community would yield almost certain defeat for the new ideas. Also, great circumspection must be used lest resentment be generated in the community, directed against both the youth and the outside technicians.

A device that has been used by more than one successful project director is to discuss new ideas quite informally—but not as definite proposals—and preferably with community leaders. Eventually some individual or individuals will appropriate these ideas as their own and suggest that the community undertake the innovations. These then become the "property" of the elite,

which may even gain prestige by their introduction. There might arise what Thomas Cochran has called sanctions to encourage deviant behavior.

Induced Change at the Local Level versus Broad Economic Development. Professor Hoselitz, in his analysis, used national concepts of society—much broader than the local concepts I have been using. It is to be presumed that his changes would be accompanied by equivalent modifications in local societies. But there is another difference between his subject area and mine: His process is autonomous, in that influences from outside are not presupposed. Current community development programs are typically promoted by or assisted by national governments, by private or public agencies from other countries, or by intergovernmental organizations. Whoever the sponsor, there are influences from outside the local community and there is pressure for rapid change.

It is almost certain that much the same processes as he describes operate in local societies and that they can be turned to the use of the development promoters from outside. Furthermore, if there were effective development programs in a sufficient number of communities, following similar patterns, their accomplishments could establish new national patterns of the sort referred to by Professor Hoselitz. It is conceivable, however, that diverse local programs, however successful individually, could deter the achievement of new national institutional patterns.

ALBERT O. HIRSCHMAN: In accordance with my assignment, I shall comment on the paper presented by Dr. Hoselitz; and I shall limit myself to discussing one point of that paper which seems to me of particular interest; namely, the causal relationship between deviant behavior and marginal or minority groups on the one hand and the emergence of entrepreneurship on the other.

This hypothesis opens up a fruitful line of research. It is a generalization of earlier attempts at explanation of capitalism (such as the Protestant ethic) and appears to cover satisfactorily a wide variety of situations. Let us pause critically, however, before we add a "minority-entrepreneurship ratio" to the capital-output ratio as a principal tool in the analysis of economic development.

The career of the capital-output ratio over the past ten years has been a real success story. Nevertheless, there are some weighty critical voices. Professor Cairncross, for instance, holds that we should think more in terms of economic development leading to capital formation than the other way around. He argues—convincingly, I think—that when development is under way, savings are increased or are newly directed toward productive investment for several reasons: windfall profits are realized at several points in the economy and opportunities for profitable investment are suddenly perceived by many operators in an expanding economy.

Now I would like to show that the causal nexus between marginal groups and economic development can be similarly reversed. In the first place, the traders and businessmen which Dr. Hoseltz refers to, such as the Chinese

in Southeast Asia and the Lebanese in Latin America, are highly mobile groups, with an excellent flair for profitable business opportunities. Given the advances in transportation and communications as well as the excellent system of intelligence maintained by these groups, their members are likely to go wherever unexploited opportunities appear. But these opportunities arise typically as a result of previous economic growth. This is even more so in the case of the American and Western European expatriates mentioned by Dr. Hoselitz. No doubt the settlement of these specialized groups leads to further economic progress; but their presence can be interpreted as an effect as well as a cause of economic development in the host country.

I am tempted to go even further and to affirm that frequently those who act as entrepreneurs in an underdeveloped country will ipso facto convert themselves into a deviant minority group even if originally nobody would have considered them to be anything of the sort. A good example is supplied by the inhabitants of Antioquia, a province of Colombia. The Antioqueños have been outstandingly enterprising in bringing virgin lands under coffee cultivation and in establishing industries, mostly in their capital of Medellin. Their racial, religious, and cultural characteristics do not differentiate the Antioqueños from the other Colombians, but having taken such a prominent part in the country's development, they are now considered practically as a separate group; and even though it is unsupported by any evidence (see J. J. Parsons, Antioqueño Colonization in Western Colombia, Berkeley 1949, page 62), the conviction is widespread that they are really of Jewish, or as a minimum of Basque, origin!

A less extreme but essentially similar situation can be observed whenever the first stages of commercial and industrial development are strongly localized, especially when the locus is distinct from the capital city. In such cases, the inhabitants of the new center are immediately branded by their countrymen in general and by the capital city dwellers in particular as crass materialists, adept at sharp practices only and oblivious of the arts and all the higher values. Naturally, the inhabitants of Milan, Barcelona, São Paulo, Medellín, and Guayaquil, to cite a few of these situations, retort by calling the citizens of Rome, Madrid, Rio de Janeiro, Bogotá, and Quito lazy bureaucrats, parasites, fossils, etc. But, by taking the lead in developing their country, they do in any event set themselves apart from the rest of their countrymen and the rift, once started, may well widen cumulatively over a considerable period of time. The very fact that the leading families of these commercial and industrial cities live far away from, and often in conflict with, the centers of politics, public administration, and education, makes for a dogged and proud concentration of succeeding generations on business pursuits rather than for absorption of the most talented by other careers that carry more prestige in a traditional society. In this respect, then, they behave almost like minorities which are excluded from these careers.

Naturally it is no accident that industrial enterprise is developed by some individuals rather than by others in a given country; but when we are looking at an industrialization process after it has been under way for some

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#### KEYNESIAN ECONOMICS AFTER TWENTY YEARS

# WHAT IS SURVIVING? AN Appraisal of Keynesian Economics on Its Twentieth Anniversary

By William Fellner Yale University

In the twenty years that have elapsed since the publication of John Maynard Keynes's General Theory of Employment, Interest and Money, this work has come to mean different things to different economists. Not even in the first approximation is the "Keynesian influence" a well-defined concept. I think it is impossible to understand the problem with which this anniversary session is concerned unless we are willing to distinguish between at least three meanings of the Keynesian influence.

To avoid frequent repetition of lengthy phrases, I will speak here of (1) cyclical Keynesianism, (2) stagnationist Keynesianism, and (3) fundamental-theoretical Keynesianism. Anticipating the conclusions, I will add that in my opinion "cyclical Keynesianism" has survived these twenty years and will continue to be influential doctrine in the predictable future. "Stagnationist Keynesianism" and "fundamental-theoretical Keynesianism" have received hard blows, and they might not survive, or at least not in much strength. I shall also argue that specific analytical tools of the Keynesian system will retain their usefulness in contexts where it is advisable to disregard the equilibrating faculty of changes in the general price level.

Let us first turn to what, for the sake of brevity, I have called "cyclical Keynesianism."

Given the general price level, saving obviously does not have to be equal to planned investment at the capacity level of output. There may take place an unplanned (unexpected) accumulation of inventories, coupled with the hoarding of previously active money or with failure of new-money creation to keep pace with the increase in output; or there may take place an unplanned reduction of inventories, coupled with dishoarding or with new-money creation that exceeds the increase in output. The first of these cases is that in which planned investment

<sup>&</sup>lt;sup>1</sup> As long as we assume constancy of the general price level, we may perhaps postulate that planned and realized savings are always equal. But even if these two magnitudes should be unequal, this need not create the same disturbance as the inequality of planned and realized investment. Therefore, I shall engage in no disussion of unexpected savings here.

falls short of savings and the second that in which planned investment exceeds savings. In the second case, where planned investment exceeds savings at a stable price level, it is at least in principle always possible to restore the balance by restrictive credit policies. But in the first case, where saving exceeds planned investment at a stable price level, it is not always possible to restore the balance by the conventional easy money policies of central banks.

Conventional central bank techniques can supply more reserves to the banks, and they can reduce interest rates on government securities to very low levels, although they presumably cannot reduce these rates quite to zero. This leaves the rates on business loans subject to a positive (and perhaps not even so very low) floor level. If, to begin with, full capacity saving exceeds planned investment at the given price level and if we limit ourselves to conventional easy money policies, it is unpredictable how much of the new money will go into additional investment and how much into idle deposits. In a period of major depression tendencies, most of it is quite likely to go into idle deposits. As long as we assume constancy of the general price level, compensatory fiscal as well as monetary policies may be needed to avoid large-scale cyclical unemployment and excess capacity.

But why assume constancy or near constancy of the general price level? The logic of the matter leads us to the question whether in the absence of wage and price rigidity the saving-investment balance would or would not become restored at the capacity level of output by changes in the level of money wages and prices. The logic of the matter should lead us to this question of price-level adjustments at any event, even if conventional easy money policies were generally reliable means of restoring balance, because even the conventional central bank techniques are interferences, and the logic of the matter inevitably brings up the question whether a market economy is self-adjusting through changes in money wages and prices.

It is a characteristic property of what I here call cyclical Keynesianism that it by-passes the question of the consequences of money-wage and price adjustments with an answer that is evasive and yet not meaningless. The answer is that when we are faced with the problems of business cycle policy we frequently wish to proceed as if a self-adjustment mechanism via significant changes in the general wage and price level did not exist. We wish to do this because even if in a free market economy such an adjustment mechanism should exist, it is likely to be a very sluggish mechanism, operating with lags and detours and impeded by institutional obstacles the existence of which, even in a reasonably free market economy, we should not overlook. Therefore, when a discrepancy develops between full employment savings and

planned capital formation, cyclical Keynesianism favors policies that work toward restoration of the balance without reliance on significant changes in the general level of money wages and prices. These policies include countercyclical regulation of the relationship between fiscal revenues and fiscal expenditures as well as central bank techniques.

This brief account has moved on thoroughly familiar ground; it raises the question whether cyclical Keynesianism should be called Keynesianism at all. At least in some countries compensatory central bank action has a history that is more than a century old, and the objectives of compensatory central bank policy have been those of cyclical Kevnesianism. Toward the end of the nineteenth century and in the beginning of the present, Wicksell's work convinced many economists that in business cycle analysis it is fruitful to attribute an important role to saving-investment discrepancies. From the twenties on, Robertson in England and a prominent group of economists in Sweden have been using brands of their own of the saving-investment analysis. Their conclusions fall under the heading of cyclical Keynesianism, to some extent even with respect to countercyclical fiscal policy. In connection with these contributions it is anachronistic to speak of Keynesianism. The General Theory was published in 1936; even the Treatise on Money was published after the decade of the twenties (1930). The truth of the matter is that the Keynesian contribution came after a long sequence of important antecedents and that any intelligent presentation of so-called "Keynesian" views requires integrating the Keynesian formal apparatus with analytical elements to be found in the writings of the preceding period. Yet Keynes's contribution to the problem now considered was very significant, and in doctrinal history it is by no means uncommon to associate approaches primarily with the names of writers who toward the end of a historical sequence gave a doctrine a particularly effective formulation. This is why cyclical Keynesianism may after all not be a misleading term, although it is a term which does not do justice to the contributions of the pioneers.

I think it is exceedingly likely that the world would have been spared many tragic events if around 1930 cyclical Keynesianism had been generally accepted doctrine. The German case provides perhaps the most convincing argument in support of this thesis, particularly in view of the fact that world politics has become so lastingly and decisively influenced by what happened in Germany during the thirties. Extended mass unemployment was unquestionably the most powerful among the factors responsible for Hitler's rise to power in January, 1933, and therefore for World War II and for its aftermath. It is impossible to match the German illustration with equally strong ones from other countries, but given the general characteristics of contem-

porary Western social systems, failure to engage in compensatory fiscal as well as monetary policy during periods of severe depression would have exceedingly grave consequences everywhere. Nor can a single country succeed in its compensatory policies all by itself; that is to say, without some degree of international co-operation in these matters.

One's enthusiasm for cyclical Keynesianism may well become tempered by a tendency on the part of governments to adopt compensatory policies in an asymmetrical fashion, with the result that at the end chronic inflationary pressure is produced. This is an acute danger particularly in an environment where money wage increases, such as exceed the rate of increase in productivity whenever full employment exists, may force a choice between inflation and some amount of unemployment. In such an environment the pressures of the social system might very well tip the efforts of compensatory policy in the inflationary direction.

In their advising capacity economic experts should not overlook this danger. Still, it seems to me very much preferable to try to cope with this danger by urging a less-than-perfectionist attitude to the problem of full employment than to refrain from using strong policies when we become faced with strong cyclical swings. Indeed, it seems inconceivable that any responsible government should revert to the prewar policies in this regard.

On the other hand, the inclination to resort immediately to fiscal policy, even when the economy is faced with weak or moderate swings, is also connected with the influence of cyclical Keynesianism. This attitude, which plays down the promise of compensatory central bank policies to a wholly unwarranted extent, was based on an unreasonable version of cyclical Keynesianism. Fortunately, this attitude has recently been weakening. It is true that central bank policies cannot cope with significant tendencies toward instability all by themselves, but they can do much to counteract weak or moderate tendencies toward instability, and they have the great advantage of prompt adjustability. This is being increasingly recognized.

Let me now turn to what I have called "stagnationist Keynesianism." The basic premises of stagnationist Keynesianism include those of cyclical Keynesianism and also a further premise. It is postulated that when at the capacity level of output planned investment begins to fall short of saving by a significant margin, conventional easy money policies are insufficient to restore balance, and that the wage-price flexibility mechanism either cannot or should not be relied upon to restore it. This is implied in cyclical Keynesianism, too. In addition, stagnationist Keynesianism implies that in advanced industrial economies such under-

investment or oversaving tends to become the typical state of affairs. Thus, we are supposed to get a tendency toward chronic unemployment; that is, toward a level of underutilization where saving ceases to be greater than planned investment.

Stagnationist Keynesianism had a very great impact on the thinking of economists in the decade following the publication of the *General Theory*. The number of converts was especially great in the United States. Even now it is not uncommon to try to explain away the characteristics of all decades other than the thirties by the hypothesis that these other decades have had some exceptional property.

By now the stagnationist predictions have acquired a very substantial degree of implausibility. From the outset the proponents of the doctrine were faced with the difficulty that by the logic of their argument the evils of stagnation should have emerged gradually during a span that started a long time ago, about the turn of the century or even earlier. The logic of the argument, as I see it, is centered on the assumption that a gradually mounting pressure of diminishing returns reduces the rate of return to investors on the amount of new investment which would be required to match full employment savings. Innovations, it is then argued, should be expected to become increasingly insufficient to offset this growing pressure of diminishing returns.

Yet the process of capitalist expansion into vacant or primitive areas started to slow very much earlier than in the thirties. The same is true of the proportionate rate of growth of the population. Surely, in the United States and also in the world of Western capitalism taken as a whole, the rate of increase in "utilized land" and in the labor supply (the increase in land-plus-labor, so to speak) was much smaller relative to the rate of increase in the capital stock about 1900 than several decades earlier. By the turn of the century, innovations were surely performing against a "mounting pressure of diminishing returns." They have been performing against a mounting pressure for a long time. In the long run they have been offsetting this mounting tendency quite successfully. We have been adjusting to a rising scarcity of land-plus-labor relative to capital.

Perhaps the best way of expressing this is to say that Keynes and the stagnationists were right in maintaining, or at least implying in their argument, that changes in the relative resource positions of advanced economies call for certain adjustments. To be more specific here than the stagnationist literature has been, one or more of the following adjustments is needed if profit rates are not to fall to very low levels: (1) more plentiful innovating activity (that is, innovating activity that raises output per unit of resource-inputs more than was the case in earlier phases); or (2) relatively more land-and-laborsaving

and relatively less capitalsaving innovating activity (that is, innovating activity that has a more favorable effect on the relative share of capital than did the earlier innovations); or (3) a lower propensity to save (lower investment-output ratio), corresponding to the lower rate of acquisition of new resources which are complementary with capital.

Keynes and the stagnationists seem to have been wrong in implying that we shall not get some combination of these adjustments. Advanced economies seem to have been getting both the first and the third of these adjustments; that is, more plentiful innovating activity and a lowering of the investment-output ratio. There is a presumption, it seems to me, that in this connection the emphasis should be placed more on accelerated innovating activity than on the lowering of the investment-output ratio. In the United States, for example, each unit of new capital formation seems to bring more increase in output now than was the case in earlier periods; an increased rate of technological-organizational progress (more plentiful innovating activity) appears to be the most plausible explanation of this. There exists no good reason to assume that historically we would be running into diminishing returns on any major scale, or with much consistency, even if the saving-output or investment-output ratio were the same now as it was two or three generations ago. The saving-output or investment-output ratio has become lower, but it would be far-fetched to argue that with somewhat higher saving Western economies would be running into diminishing returns to the extent of generating chronic deflationary pressure.

In the Western world, investment opportunities have so far stayed plentiful indeed, except in periods of cyclical depression (some of which, however, were of considerable duration). Technological-organizational advance may very well prove to be a self-accelerating process. At any rate, the thesis of secular stagnation must by now explain away five decades or more as atypical decades when it represents a single decade as reflecting allegedly typical conditions in advanced industrial systems. Innovations have been sufficiently plentiful and their land and laborsaving character has stayed sufficiently pronounced to prevent any appreciable secular lowering of rates of return to investors.

Even if economic stagnation should in the future become the typical state of affairs in Western societies, the cuestion of whether the reasons are Keynesian or Schumpeterian would, of course, stay controversial, since net rates of return to investors are influenced by redistributive political measures as well as by the relative factor supplies in our economies. But the main point here is that stagnationist

predictions cannot at present properly be derived by projecting into the future the observable long-run relations of the past.

Notwithstanding favorable secular trends, the influence of stagnationist Keynesianism may wane only gradually. In fact, its influence has been on the decline for some time, but this has been a slow decline. The dangers of a stagnationist bias in professional opinion are not negligible. Experts with a stagnationist bias are apt to suggest strong antideflationary measures when we move into a cyclical phase which later turns out to be one of minor recession; in other words, a policy of cyclical Keynesianism may become distinctly lopsided (inflationary on balance) if the policy is administered by experts who are under the influence of stagnationist Keynesianism. Furthermore, in times of severe cyclical depression such experts may show a tendency to favor not merely those antideflationary public policies which at the same time provide incentives for a subsequent full recovery of private investment. but also some public investment policies which discount, so to speak, the inability of private investment ever to recover to its former significance.

On the whole, my own view is therefore that while stagnationist Keynesianism has raised questions of very great analytical and practical interest (and in this sense has been very fruitful), much harm could develop from a stagnationist attitude to problems of economic policy. I feel that it is exceedingly important to divorce a reasonable version of cyclical Keynesianism from stagnationist Keynesianism or, as we might prefer to put it, to hasten the gradual process by which the two are becoming divorced from one another.

The third and last meaning of Keynesianism to be considered in the present paper is that which we have called "fundamental-theoretical Keynesianism." I here mean the theoretical position that denies the Pigou effect or Patinkin's "real balance effect." The positions which in this paper were called those of cyclical Keynesianism and of stagnationist Keynesianism can afford to by-pass the fundamental question of whether, in the event of threatening demand insufficiency at a given price level, a fall in money wage rates and in prices would not always raise effective demand to the size consistent with full utilization. If we disregard problems of transition (expectational spirals and the like), perfect flexibility of money wage rates and of prices could have this beneficial consequence by raising the real value of the already existing money hoards and by thus encouraging the use of money for the purchase of goods. This was pointed out already by Haberler in the early stages of the controversy about the General Theory. Cyclical and stagnationist Keynesianism were defined as implying either that the reasoning which establishes the real balance effect of price reductions is invalid

or that the reasoning, while theoretically valid, lacks practical significance. This is somewhat evasive. What I here call fundamental-theoretical Keyensianism differs from the other two types of Keynesianism in that it is not evasive concerning the real balance effect of money wage and price reductions. Fundamental-theoretical Keynesianism denies the existence of this effect.

It might perhaps be objected that Keynes did not argue for the position which we here define as that of fundamental-theoretical Keynesianism. Into the analytical framework which he introduced Keynes did not incorporate the real balance effect (this statement will scarcely be contradicted), but the reasons why he failed to do so are not quite obvious. From the outset he may have omitted from his formal system those analytical elements which (had he included them) he would have had to disregard at the end because of his conviction that lags, frictions, and institutional rigidities render the real balance effect practically insignificant. On the whole I believe, however, that Keynes's failure to develop a clear-cut verbal argument with respect to the real balance effect, which at the same time is absent from his formal system, should lead us to contrast his views with the views of those who do attribute theoretical importance to the real balance effect. This is why I speak of fundamental-theoretical Keynesianism when I mean denial of the theoretical validity of the real balance effect.

It seems to me that the anti-Keynesian reasoning which establishes the real balance effect is valid reasoning, but that a theoretical system which relies on the equilibrating faculty of the real balance effect should recognize that the rate of growth may depend importantly on how much or how little use the economy is allowed to make of general price changes in equilibrating itself.

Let us for a moment completely disregard lags in the adjustment process and also rigidities of a sociological-political character. Even on these assumptions, there remains the difficulty that it is impossible to describe a series of appreciable, consecutive price reductions without thereby postulating a very high real rate of interest. This means little growth or, if we carry the assumption far enough, perhaps no growth. If price reductions instead of monetary expansion were used as a means of satisfying the desire for additional real balances, the real rate of interest might have to rise regardless of how far the money rate of interest is lowered. After all, the money rate is subject to a floor, perhaps somewhere near the zero level. Growth rates would be reduced, and if the size of the required price reductions were great enough even for relatively small rates of growth, stationary or near-stationary equilibrium would be the only analytical result consistent with these assumptions.

To put it briefly, with the aid of the real balance effect of price changes it is possible to describe a process which will eliminate any demand for additional real balances and hence any possible deficiency of effective demand; but if the demand for real balances were equated with the supply of real balances by this mechanism instead of by the proper degree of monetary expansion, the growth process might be harmed or even destroyed. This is the tentative conclusion which the present state of the controversy suggests to me concerning the real balance effect. While this conclusion is non-Keynesian, it is obviously influenced by analytical developments which were greatly stimulated by Keynes's work. If we reject fundamental-theoretical Keynesianism, we may view the Keynesian analytical apparatus as a simplifying device which disregards the equilibrating faculty of changes in the general price level. For the reasons here indicated, it seems to me that this is frequently a very useful simplification in the theory of longrun growth as well as in the analysis of countercyclical policies.

In this anniversary session I should perhaps have spent less time trying to analyze problems in detail and more time making general observations. Yet the main general observation which I would like to offer did require reference to detail. Some important specific ideas of the General Theory have become incorporated into widely accepted economic theory, although it is not at all obvious just how Keynesian or Robertsonian or neo-Wicksellian or neoclassical the integrated product is. The ideas that have thus found their way into the main stream of doctrinal development are those of cyclical Keynesianism rather than of stagnationist or of fundamental-theoretical Kevnesianism. Also, there has recently developed a good deal of awareness of differences between reasonable versions of cyclical Keynesianism, which allow for the efficacy of central bank policy in periods of moderate disturbance, and extreme or unreasonable versions of cyclical Keynesianism which place all the emphasis on fiscal policy. But the elements of Keynesian theory that have found their way into the main stream of doctrinal history do not tell the full story. Even where the present generation and the next are unlikely to go along with Keynes's answers, they will find that Keynes posed problems in a fruitful fashion. They will want to move with Keynes over some sections of his analytical route, although they presumably will not wish to stay on Kevnes's route right to the stage of definite conclusions. This is what I was trying to say in a somewhat detailed discussion of specific propositions.

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To be sure, while Keynes called his book of twenty years ago a General Theory of Employment, Interest and Money, the number of

### THE INFLUENCE OF KEYNESIAN ECONOMICS ON CONTEMPORARY THOUGHT

## By Dudley Dillard University of Maryland

In appraising the influence of Keynesian economics one is immediately confronted with the question whether Keynesian economics refers exclusively to tools of analysis like the propensity to consume, the marginal efficiency of capital, and liquidity preference, or whether it also embodies a substantive contribution; that is, quantitative and qualitative judgments about institutional and historical developments. Among the great majority of academicians and professionals, Keynesian economics probably means tools of analysis, and the influence here should be judged in terms of the acceptance or rejection of Keynesian concepts. To the world outside academic halls, economics is thought of in more substantive terms, and consequently Keynesian economics should be judged in this connection in terms of its influence on policy and ideology.

Academic economists are also interested in policy questions, but they are inclined to evaluate Keynesian economics as a conceptual system which per se has nothing to do with policy and ideology. This enables many who do not agree with Keynes's views on economic policy to utilize in good conscience the Keynesian tools of analysis and even to consider themselves Keynesians. In this sense there is much validity in the statement, "We are all Keynesians now," although for the peace of mind of a minority who may feel ill at ease in this category, the statement should be amended to read, "We are nearly all Keynesians now." In this connection one should bear in mind that Keynes was careful not to say classical economics is wrong. His main criticism was its irrelevance to explanations of unemployment. Keynesian economics supplements rather than supplants the theory of resource allocation. Under conditions of full employment the classical theory comes into its own.

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#### I. Present Status of the Technical Concepts

One simple but significant measure of the influence of Keynesianism on contemporary economics is obtained by comparing the textbook of today with that of twenty years ago. The changes have been profound. National income analysis, born in 1936, now sits at the head of the table even before attaining its twenty-first birthday. The theory of

the firm—twenty years older and considerably heavier—has been dethroned, and in some cases the marginal cost-marginal revenue analysis is looked upon as a stepchild and has been relegated to the annex. The numerous progeny, which might be called problem children, receive less attention than before because the new young master demands so much attention. Money plays a more important part in family affairs because King Macro has a special affinity for liquidity preference. Family relations are good, but some members lack a clear idea of how they are related to each other.

My belief is that all the major parts of Keynes's economics remain pretty much as he devised them, with, of course, the inevitable refinements and additions. Any significant body of theory must possess organic unity; that is, consist of concepts, theorems, and propositions—all of which are related to each other and to the system as a whole. In the nature of the case the removal of any major part would greatly weaken the whole theory. It is easier to abandon an entire system than to abandon major parts of a system. If a body of theory survives, because it is useful or for any other reason, additions are more likely than excisions.

The Keynesian consumption function has stood up pretty well in the light of many theoretical critiques and statistical investigations. Keynes claimed only that the relation of consumption to income is a "fairly stable function." He recognized the influence of other variables and warned that they must not be forgotten No one, to my knowledge, has denied his main point; namely, that income is the principal variable upon which consumption depends.

The most important addition to Keynesian theory, in my judgment, has been the long-term consumption function, as a supplement to Keynes's short-term consumption function. Duesenberry's type of long-term consumption function is important, not only as a piece of technical apparatus, but also because the icea embodied in it moderates the basic message of the *General Theory*. The size of the gap which must be filled by investment increases much less rapidly than is implied by Keynes, because of the upward movement of the short-term function. The range of instability and the threat of stagnation are thereby reduced, although by no means eliminated.

One conceptual problem arising in connection with the stability of the consumption function is the use of "consumption" to mean expenditure of money rather than the actual process of using goods and services. If a consumer's durable purchased in period one lasts for several periods, the current expenditure in period one exceeds the actual consumption, when the latter term is defined as utilization of the good; and in the subsequent periods the actual consumption exceeds

the expenditure. A bunching of purchases of durables such as occurred at the outbreak of the Korean conflict in 1950 and of automobiles during the first three quarters of 1955 may yield data which show consumption increasing faster than income, because consumers are investing in durables at a rapid rate. Instability of the consumption function may be more apparent than real, depending on which definition of consumption is chosen. If actual consumption is preferred to money expenditure as a measure of consumption, then data on consumer inventories are needed to determine how nearly the two measures of consumption correspond.

Keynes claimed more novelty for his liquidity-preference theory than subsequent commentators have been willing to concede. While the loanable-funds theory of interest seems to hold a lead in popularity among economists, the liquidity-preference theory is still very much in evidence. The consensus appears to be that there is no significant difference between these two theories of interest. Perhaps the most important refinement of the Keynesian theory of interest has been made by Professors Hicks and Hansen. The point at issue, however, is really a minor one. In his formal model Keynes did not take account of the influence of changes in the level of income on the quantity of money available for speculative balances. Professor Hansen is technically correct that the interest rate is indeterminate until income is known. Other logical refinements in the Hicks-Hansen model show the relation of productivity and thrift in the determination of the Keynesian interest rate. Logical completeness has its virtue but simplicity has its charm. Kevnes preferred charm to virtue.

The marginal efficiency concept has undergone less alteration than either of the other two basic schedules in the original Keynesian construction. In its purely formal properties it was less original with Keynes than the consumption function or the liquidity-preference function. Keynes's contribution here relates to the uncertainty of expectations on long-term investments rather than to the formal concept of the marginal efficiency of capital. Further study of Keynes leads me to the conviction that uncertain expectations constituted for him the most important single premise in his monetary theory of production.¹ For those Keynesians who emphasize the irrationality of the investment process, the marginal efficiency of capital is the most vital concept in the entire system.

Hardly any concept or proposition in Keynes's General Theory has

<sup>&</sup>lt;sup>1</sup>The term, "Monetary Theory of Production," was the title Keynes gave to his lectures at Cambridge during the early thirties. For discussion of this concept in relation to the central theme of the *General Theory*, see my "The Theory of a Monetary Economy," in *Post-Keynesian Economics* (Rutgers University Press, 1954), edited by Kenneth K. Kurihara, pp. 3-30.

gone unchallenged, but most, although not all, of these criticisms lack operational meaning. A typical performance is for a critic to deliver a vigorous refutation of Keynes, only to acknowledge that the criticism has no practical significance. For example, almost no one any longer recommends money-wage cuts as a remedy for unemployment, but writers are still showing that if wages and prices are completely flexible and if the expectational effect is not unfavorable, wage cuts would eliminate unemployment. Other examples of this type of criticism pertain to the Pigou effect, equilibrium at less than full employment, Say's law of markets, the flattening out of the liquidity-preference schedule, and propositions invoking the completely un-Keynesian assumption of unchanging expectations.

Models constructed by theorists with no feel for practical policy are frequently so unrealistic in their assumptions—and therefore in their conclusions—that they can have no conceivable utility except to test the capacity of our students in logical gymnastics. Keynes may not always have been more logical than his adversaries but what he said was usually more relevant to the problems of actual experience.

#### II. Keynesian Influence in Its Breader Aspects

In discussing the influence of Keynesian economics on policy, institutions, and ideology, I take as my text Alfred Marshall's statement that poverty constitutes the most important problem and the chief justification for the study of economics. My thesis is that the essential difference between pre-Keynesian and Keynesian economics resides in attitudes toward a solution of the problem of poverty. The shift from what may be called the economics of scarcity to the economics of potential plenty reflects nothing less than recognition on the level of economic analysis of the age of mass production, a movement that had its roots in the nineteenth century but the concrete manifestations of which became abundantly clear only in the twentieth century. Economic historians sometimes speak of this as the second industrial revolution. Since Keynesian economics reflects the most far-reaching economic development of the twentieth century, it can hardly be viewed as a passing fancy of the Great Depression of the thirties, even though it was that great catastrophe which precipitated a Keynesian vision of twenty years into a system of analytical techniques which we know as the general theory of employment.

During the Great Depression, economists continued to teach that the economic principle is concerned with the allocation of scarce resources and that economic problems are therefore problems of scarcity. No one would deny to economists the right to define their subject in any manner they wish, but little common sense was needed to under-

stand that scarcity was not the economic problem. How false, therefore, were the teachings of the economists in a pragmatic, historical, and operational sense. How shockingly unrealistic it must have seemed to hungry men, living in the shadows of smokeless chimneys and praying for the offer of a job, to be told that workers employ the means of production and thereby determine the volume of employment. How frustrating to be told in the midst of incalculable social waste and involuntary unemployment that the solution of our economic needs lay in frugality and hard work. The orthodox economists were violating their first maxim that science should deal with what is rather than what should be.

The old ideology of scarcity, frugality, and abstinence was discredited by the sheer force of circumstances. Keynes moved in to fill the vacuum with what Professor Schumpeter was wont to call a "vision," defined as a "preanalytic cognitive act." Adumbrations of Keynes's vision ran through his earlier writings but it was first clearly perceived in the *Means to Prosperity* (1933) and received theoretical implementation in the *General Theory* (1936). Keynes verbalized his vision in the opening sentence of the *Means to Prosperity* as follows: "If our poverty were due to famine or earthquake or war—if we lacked material things and the resources to produce them, we could not expect to find the Means to Prosperity except in hard work, abstinence, and invention. In fact, our predicament is notoriously of another kind."

Following Professor Rogin, we shall speak of Keynes's insight as the optimistic hypothesis of abundance. It takes on momentous significance, not because Keynes was the first to express the idea that poverty is unnecessary, but because he was the first to elevate it to a leading principle of economics which found wide acceptance in an age in which it was consistent with the underlying technological conditions of mass production and the underlying political institutions of mass democracy.

Prior to the Great Depression, economics was pervaded by the pessimistic hypothesis of scarcity. It finds clear expression in the Malthusian principle of population and in the law of diminishing returns. Marshall struggled to give some operational meaning other than unavoidable poverty to the economic principle of scarcity, and Professor Pigou elevated "welfare economics" to the forefront of economic discussion. They continued, however, to attribute poverty to the limitations of human and material nature. Keynes, on the contrary, embraced the heresy which attributes poverty to social and economic institutions.

The revolution in thought led by Keynes could have happened only against a backdrop of severe crisis. Keynes was ideally suited to lead a two-front war on classical theory and practice because he had one foot in the world of affairs and the other in King's College. His position seemed realistic in the light of the prevailing predicament of the economy and it satisfied the requirements of the science among the younger generation of economists and ever won many converts from the older generation. The crisis gave his iceas greater influence than the General Theory would merit as a sheer intellectual tour de force.

The Keynesian vision of abundance pervades all the concepts and obiter dicta of the General Theory but is most forcefully represented by the principle of effective demand. This is Keynes's answer to Marshall's most important problem of poverty. Immediately following his preliminary summary of the principle of effective demand in Chapter 3, Keynes says: "This analysis supplies us with an explanation of the paradox of poverty in the midst of plenty." The principle of effective demand is well known. In a potentially wealthy society, everyone cannot be put to work producing consumers' goods because there would not be enough demand to buy back all the consumers' goods produced. Some means must be found to disburse additional income, most of which will be spent on consumers' goods, without bringing onto the market any current consumers' goods to be sold. "Investment" is the activity which injects the additional income. Normally it takes the form of producing capital goods, but the same function of disbursing income may result from payments for leaf raking, building battleships, fighting wars, or by refunding income taxes paid in previous years. My purpose here is to show how the principle of effective demand followed from the optimistic hypothesis of abundance and how it countered the pessimistic hypothesis of scarcity, frugality, abstinence, and hard work.

The optimistic hypothesis of abundance is manifest in many other facets of the Keynesian analysis: in the notion that the marginal efficiency of capital may fall to zero in a courle of generations of full production; in the view that interest rewards no genuine sacrifice any more than the rent of land; in the attitude toward a large public debt; in the passive role assigned to saving; in the criticism of "sound finance"; and in the view that equality of income is fully compatible with progress in the accumulation of wealth. Lest there be any misunderstanding, it should be pointed out that the hypothesis of abundance applies only to advanced capitalist countries. Keynesian economics is not very germane to underdeveloped countries, where abundance is not a short-term possibility and the classical medicine for poverty applies.

Loan expenditure was Keynes's means to prosperity during the depression. This involved, of course, deliberately unbalanced budgets and ran counter to accepted principles of public finance. In 1930, the

British Treasury cut the salaries of school teachers and retrenched on other expenditures in order to try to bring the budget into balance. President Hoover was so outraged by Keynes's ideas that he referred to deficit spending and related recommendations as "Operation Cuttlefish" and branded Keynes, along with Marx and Mussolini, as one of the three greatest enemies of modern civilization. Franklin D. Roosevelt, who later supported deficit spending, in the campaign of 1932 leveled a blistering attack against President Hoover for failing to balance the budget and called for drastic reductions in federal expenditures. Professional economists had little wisdom to offer in pointing a way of escape from the crisis. Keynes, however, knew what should be done, and his prescription of loan expenditure has now become a standard remedy for depressions. The acceptance of deficit financing as a respectable type of public policy is one of the remarkable changes in public thinking for which Keynesian economics has been primarily responsible.

Another way to express the operational meaning of Keynesian economics is in terms of a repudiation of the theoretical foundations of laissez faire, on the one hand, and the theoretical sanction for a mixed economy, on the other hand. In much the same way that Marx the socialist presents a theory of capitalism as the basis for an argument for socialism, so Keynes the interventionist presents a theory of laissez faire as the basis for an argument for a mixed economy. If the economic system is not self-adjusting, then positive steps are needed to insure full employment. By refraining in the General Theory from blueprinting the type of intervention that would be required to overcome the paradox of poverty in the midst of potential plenty. Keynes leaves open a flexible view of the future, with, however, the direction clearly indicated. The concluding chapter of the General Theory states the social philosophy of a mixed economy. The degree of the mix is flexible, but the area of government activity will be much larger than under the limping laissez faire existing in the United States and the United Kingdom at the onset of the Great Depression. Private property is neither defended nor attacked on economic grounds. Keynes always maintained that the issue of private versus public ownership of the means of production is unimportant. So long as private ownership in the means of production does not militate against the realization of abundance, it should be encouraged because of its many noneconomic advantages. But the shift in emphasis from thrift to expenditure weakens the hallowed place which private property held in classical economics.

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Even the verbal acceptance of a new social philosophy is important because it opens an avenue through which new ideas may reach statesmen receptive to innovations in policy. In the postwar world, nearly all nations have adopted full or high-level employment programs. Both major political parties in the United States and nearly all political parties in other countries are committed on paper to use the power of government to prevent another general breakdown of the economic system. The Employment Act of 1946 in the United States is an important manifestation of the new Keynesian-type social philosophy. One of the culminating steps in this direction occurred in 1952 when General Eisenhower pledged all-out use of federal authority to prevent large-scale unemployment.

Although statesmen from F.D.R. to President Eisenhower have endorsed Keynesian-type policies against depression, there is little evidence that what has happened to the level of economic activity has been much influenced by these ideas. The United States entered the second World War with an unliquidated depression of vast proportions with no solution, except war, in sight. Since then the nation has experienced a decade and a half of war and postwar boom. Eleven years of postwar prosperity bring us now to the same relative position where the nation stood in 1929. The feeling is strong, as it was before 1929, that there will be no more major depressions. A new New Era philosophy is developing among economists, businessmen, and the public. Confidence that events will cease to resemble the past at this particular juncture in history rests, in no small part, upon the belief in the adequacy of Keynesian-type policies: built-in stabilizers, monetary policy, and fiscal policy. This appears a strange and dangerous illusion into which we have fallen—the illusion of economic stability. Although actual events have been little influenced during the past twenty years by Keynesian economics, we now implicitly put our faith in the conscious application of this type of policy to save us from the fate which has characterized capitalist development with increasing intensity during the past century and a half. We have the arrogance to assume that from now on we shall do what has never been done before. We seem to think that because we now know the causes of depressions and stagnation, we shall therefore prevent them from recurring. Such faith in human intelligence is admirable but hardly justified from experience. The burden of proof is upon those who believe that a New Era has really come to pass this time. History does not repeat itself, but neither does it suddenly reverse itself. It is not another 1929 to 1932 that we have most to fear, but another 1936 to 1939.

It is as important not to overestimate the influence of Keynesian economics as it is not to underestimate it. The power of ideas to control events is, at best, limited and works with moderate influence only over very long periods of time. Keynes himself erred in overstating the

influence of ideas. In the closing paragraph of the General Theory he wrote: "The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else." My reading of history does not bear out this faith in the power of ideas to influence events. Professor Pigou seemed closer to the truth in the closing paragraph of his presidential address to the Royal Economic Society: "The hope that an advance in economic knowledge will appreciably affect actual happenings is, I fear, a slender one. It is not likely that there will be a market for our produce." Here is one example, at least, in which Professor Pigou admits that supply does not create its own demand!

The most that an economist can be expected to do is to clarify great issues and point to the direction of their solution. The sine qua non of greatness, therefore, is insight into contemporary historical problems. As Professor Schumpeter says, a new vision, such as Keynes's vision of abundance, is necessarily associated in its genesis with an ideology; that is, with value judgments, a point of view, a set of interests, and selection and emphasis as among the facts which are more important and those which are less important in the total complex of a social predicament. For the vision to become a part of science, according to Professor Schumpeter's methodology, it must be purged of its ideological content because economic theory (science) is neutral with respect to value judgments and practical policy. Consequently, Schumpeter accused Keynes of the Ricardian vice of "offering in the garb of general scientific truth, advice which carries meaning only with reference to the practical exigencies of the unique historical situation of a given time and country." In his review of the General Theory Schumpeter said of Keynes: "... everywhere he really pleads for a definite policy. and on every page the ghost of that policy looks over the shoulder of the analyst, frames his assumptions, guides his pen. . . . It is vital to renounce communion with any attempt to revive the Ricardian practice. . . . Economics will never have nor merit any authority until that unholy alliance is dissolved. This book throws us back again." I submit that this judgment which sees the General Theory as a great misfortune for economic theory was wrong, and that on the contrary it did more than any other event in this century to vitalize economic science. The Ricardian vice is really a virtue, or if not a virtue, let us defend the vice. The great stature of Ricardo as well as of Keynes as economists stems from the fact that they did take positive stands on the great issues of their times. My reading of the history of economic theory raises this to a general truth about the development of our discipline. In striving for neutrality economists typically achieve

sterility. Fortunately Keynes was not one of the neutralists and was thereby better qualified to promote the science. To be scientific one must be objective in the sense of being guided by the facts of experience, but one does not have to be neutral in the sense of refusing to state propositions which have operational significance for practice. In order for economists to be influential in the Ricardian and Keynesian sense, their programs, which represent the operational meaning of their theories, must be consistent with the underlying historical and institutional conditions of the age and be capable of political implementation. Ricardo's program for repeal of the Corn Laws was consistent with the best allocation of resources as between agriculture and industry and with the growing political power of the industrial capitalists as represented, for example, by the Great Reform Act of 1832. Keynes's program for full employment is an answer to capitalist instability and is consistent with the growth of mass democracy, with its willingness to act through the state if private enterprise does not make available sufficient employment opportunities. While it is unfortunate that a theory about a variant environment cannot be both historically relevant and universally valid, this is one of the facts of life mere mortals should learn to accept.

In the very long run, the influence of great ideas upon the future course of events cannot be predicted, but the subject merits speculation. Perhaps the most important contribution of Keynesian economics will turn out to be a higher stage of rationalization of economic life—in the Max Weber sense of rationalization—through the impetus it has given to national income analysis and accounting. As Werner Sombart and others have pointed out, modern capitalism would have been impossible without rational business calculation in the form of doubleentry bookkeeping. The great age of business enterprise is characterized by the extreme rationality of business accounting, on the one hand, and the complete lack of conscious calculation for the economy as a whole, on the other hand. Slowly we seem to be entering an era in which the scope of conscious calculation extends beyond the individual firm to the economic system as a whole. This is a logical inference from the demise of laissez faire. A system of conscious calculation on an economy-wide basis means that economic decisions are made in terms of their effect on the size of the national income rather than upon the profits and losses of private business. When accounting is made in terms of national income, many of the most difficult economic problems are automatically solved. For example, since unemployed workers contribute nothing to national income, it is desirable, in terms of national income accounting, that they be employed so long as they produce anything more than nothing. Hence the conscious direction of economic affairs in these accounting terms would immediately result in the disappearance of unemployment. The great social irrationality of unemployment, which so perplexed Keynes's generation, would turn out to be no problem at all. The visible hand of the national income accountant would replace the invisible hand of Adam Smith.

#### DISCUSSION

DAVID McCord Wright: I accept Professor Dillard's standard that the value of a theory is to be judged by its ability to yield policy conclusions relevant to the contemporary scene. But I also find it shockingly unrealistic that stagnation (of the capital-glut variety) should still be treated as the great danger in this time of world-wide shortages in most countries and of inflationary pressure in practically all of them.

Professor Dillard says that it has now been shown that there is no significant difference between the loanable fund and liquidity-preference theories. This statement at once says too much and too little. I agree that various definitional schemes can be drawn up formally assimilating them. But, when we leave tautology, there are a number of different cases, in some of which the two theories do yield the same results but in others of which they do not.

A diagram (below) will, I hope, help to make the matter clearer.

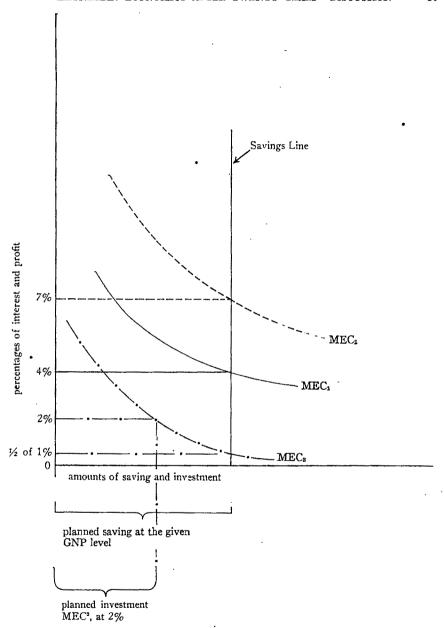
We assume a given full employment gross national product level. The abcissa measures amounts of saving and of investment. The ordinates percentages of interest and expected profit. Planned saving is assummed (for simplicity's sake) to be interest inelastic in the short run. Accordingly it is indicated by a straight vertical line.

Three marginal efficiency of capital schedules are drawn:  $MEC_1$ ,  $MEC_2$ ,  $MEC_3$ . Each is a schedule of the expected marginal return at various levels of planned investment, at the given initial GNP level, and under various general conditions of expectation and technical change, over a time period, say, of six months to one year.

 $MEC_1$  is drawn intersecting the saving line at 4 per cent. It is evident, by elementary economic logic, that 4 per cent is the only equilibrium interest rate. If the rate be higher, planned saving will exceed planned investment and income will begin to fall. If the rate be lower, planned investment will exceed planned saving, and, barring rationing of credit (since full employment is initially assumed), inflation will begin.

In  $MEC_2$  the schedule cuts the saving line at 7 per cent. It is again evident that barring inflation or credit rationing, the rate of interest must rise, and that 7 per cent is the only equilibrium figure. Some Keynesians of the type I have called "stream-lined" seem to think that Keynes's statement that the rate of interest is "solely" determined by the interaction of liquidity preference and the quantity of money excludes any effect of an upward shift in the MEC schedule upon the interest rate. This is a mistake, as I have shown in my "Future of Keynesian Economics" article in the Review (June, 1945). A rise in the MEC schedule will cause a rise in the  $L_1$  or transactions demand for liquidity. Businessmen attracted by the higher general set of profit expectation will seek new transactions balances or finance wherewith to exploit them. If language makes one any happier, one can say they wish to provide for expected or proposed higher income-activity levels.

It is true that the rise in the money rate may be temporarily prevented by



a drop in the  $L_2$  demand for liquidity due to a decline in the speculative motive. This operates, however, as an increase in velocity. It will (barring positive offsetting action by the monetary authorities) cause inflation. But once the inflationary impetus of the released funds is exhausted, the rate will rise to the proper equilibrium figure. It will be seen that the end result

is thus the same for liquidity preference or loanable funds. Keynes's schema does, however, make especially evident the possibility of an interim inflationary movement. I doubt, however, that this part of his analysis would have surprised either Ricardo, Smith, Mill, or Hume.

The really important Keynesian case is shown in our  $MEC_3$  schedule. There the pure loanable funds theorist would have it that the rate of interest would fall to  $\frac{1}{2}$  of 1 per cent, or even lower, and thus planned investment would continue to equal planned saving. But Keynes, by his  $L_2$  speculative motive analysis, which I need not repeat, shows that it may stick at, say 2 per cent. In that case, planned investment falls far below planned savings, and a general decline in gross national product levels will begin.

Some students have asked me what would make the *MEC* schedule shift? Surely it is obvious that a general rise or fall in the general state of expectation can be brought about by new discovery, new governments, new changes in social policy, the opening up of new areas.

The diagram and explanation I have given merely make clearer the analysis I published in 1945 which was approved by Keynes himself in writing as well as by Sir Dennis Robertson. Remember, also, that Keynes told Professor John H. Williams that he was trying to educate the English to the need for a higher rate of interest after the war, and that I have letters from him saying that he expects the problem after the war will be inflation, not unemployment. Failure to recognize the relativity of Keynes's teaching is not merely bad economics but bad Keynesianism!

Keynes's theory does not prove that an increase in (planned) saving or a rise in the interest rate would reduce actual saving. This would only be true "assuming no favorable change in the investment schedule." Yet Klein's text contains the mistake concerning saving, Dillard's concerning the interest rate. And there are others equally dogmatic. Furthermore, it is not necessarily true (though here I speak primarily for myse.f) that one has to rely on an upward shift in the MEC schedule. For if the saving line shifts to the right and the MEC curve remains unchanged, then reduced consumption outlay could conceivably release balances adequate to satisfy any increase in the  $L_2$  demand for liquidity due to the speculative motive. Why would the MEC curve not necessarily fall? Because investment and consumption are not necessarily linked by any fixed mechanical relationship. The investment might mostly be autonomous.

One of the principal troubles is, I believe, that Keynes's disciples have depended too much upon oral tradition concerning what he said and not paid enough attention to what he wrote. I could illustrate with several anecdotes from my own experience the difference between a teacher extemporizing in his rooms or seminar and his writings. We economists must realize that we only make progress and are scientific to the extent that we remain conscious of the multiple variety of the social process. The persistence today of streamlined Keynesianism—I mean such doctrines as that the rate of interest is a purely monetary phenomenon in reality and not be definition, or that an increased attempt to save, or a higher rate of interest, must mean a fall in

realized saving, or that capital glut is inevitable as the economy expands—is only possible because of a massive collapse of respect for fact, scholarly accuracy, and scientific conscience in a large part of the economics profession.

WILLIAM A. SALANT: Professor Fellner has expressed the view that what he calls cyclical Keynesism has won wide acceptance, but he adds that this variety of Keynesianism is the work not only of Keynes himself but also of such predecessors as Wicksell and Robertson. I should like to define what I conceive to be the character of Keynes's contribution. This will require a brief discussion of the relation between the so-called "classical" system, the work of the forerunners referred to by Fellner, and the Keynesian system.

It was in the spirit of classical and neoclassical analysis that a smoothly working economic system would tend toward equilibrium at full employment. (In this context "smoothly working" can be taken to mean dynamically stable and free of rigidities.) This implied that a reduction in any component of effective demand would set in motion a set of responses that would restore aggregate demand (in real, though not necessarily in money, terms) to a full employment level. The system might be compared to an automatic pilot which maintains a stable course by compensating for external disturbances. The automatic mechanism by which full employment was maintained or restored was not very clearly spelled out by classical and neoclassical writers; indeed, we have learned a good deal about how the classical system was supposed to work in the discussion stimulated by the *General Theory*. It is clear, however, that the interest rate was the key stabilizing force, assisted by variations in the level of costs and prices, operating either through their effects on the interest rate or directly on the real value of monetary assets.

Students of the saving-investment process, beginning with Wicksell, focused attention on forces that could alter the level of aggregate demand. These forces could be classified into those affecting saving, investment, hoarding, and the quantity of money. These writers devoted a good deal of attention to the problem of action by the monetary authority designed to counteract the disturbing forces. They accepted a stable price level (or, in some cases, stable per capita money incomes) as a desirable objective of policy, either as a means to stabilization of output or as an end in itself. In this connection, they did not always distinguish between the impact of disturbing forces on prices and on output, but their emphasis was generally on the price level. Perhaps it is fair to say that they assumed that falling prices would have a depressing effect on output and rising prices a stimulating effect, while output would be in equilibrium at full employment when prices (or money incomes) were stabilized. It should be added that a good part of the explanation for the emphasis on prices undoubtedly lies in the fact that fluctuations in prices were both more violent and more clearly revealed by the available statistics than fluctuations in output and employment.

These writers dealt with disturbances in the equilibrium of the classical system. Some of them advocated intervention by the monetary authority in order to offset these disturbances rather than reliance on the automatic

self-correcting forces inherent in the system. They did not, however, provide an alternative theory of the determination of the level of output. The Keynesian system did provide such a theory.

In order to bring out sharply the features of the Keynesian analysis which I regard as distinctive, I shall add to Feilner's three types of Keynesianism a fourth, which might be called "contingent" or "conditional" Keynesianism. This subspecies takes as its point of departure the assumption that the classical stabilizers are inoperative, that the automatic pilot is switched off. Under what conditions they will in fact become inoperative, how the classical system has to be modified in order to attain this result, is a problem of the type that Fellner calls fundamental-theoretical; contingent Keynesianism simply "evades" it, to borrow another word from Fellner, and I shall not attempt to deal with it.

Using as its point of departure the assumption that neither interest rate nor price and cost variations stabilize aggregate demand, contingent Keynesianism tells us that, given the level of investment and the consumption function, real income will be in equilibrium at that point at which saving and investment are equated. The classical stabilizers having been rendered inoperative, real income must perform the entire job of equating saving and investment. This is, of course, a stripped-down economy-model of Keynesianism. It is clearly related to Fellner's cyclical Keynesianism. Whether it is part of a continuous line of development or a mutation comparable to that which took place on the historic day when a soccer player first picked up the ball and ran with it, thus inventing rugby, I shall not attempt to judge.

A notable feature of the Keynesian system is that it lends itself to development in many directions, and such development has flourished in the two decades since the publication of the General Theory. The system can be enlarged by the insertion of elements omitted from its early versions, such as foreign trade and government, and by the disaggregation of aggregate variables. The simple hypotheses, such as the original consumption function, can be replaced by more complex and, it is hoped, more realistic ones such as the Brady-Duesenberry-Modigliani relative income hypothesis. The essentially static Keynesian system can be made dynamic by the insertion of lags, the introduction of rates of change as variables, or by allowance for changes in the capital stock resulting from investment, as in the Samuelson multiplier-accelerator model, the Metzler inventory model, and the Harrod-Domar growth models.

As regards the stagnationist form of Keynesianism, Fellner concludes that it has not made a significant theoretical contribution. But it would appear that stagnationism, as distinct from other forms of Keynesianism, is not primarily a matter of theory at all, but rather a set of quantitative judgments as to the future position of the investment and consumption functions. It is true enough that stagnationist forebodings have not been borne out (an unrepentant stagnationist might want to add the word "yet"), in that the forties and fifties have been periods of inflation rather than stagnation. Quite apart from the influence of the war and the cold war, however, it should be recalled

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that the stagnationist case rested heavily on the projection of a declining rate of population growth—a projection that has proved far off the mark. To this extent, the actual course of events has discredited one of the noneconomic assumptions of stagnationism rather than its economic forecasts, which, whatever their merits, remain largely untested.

TIBOR SCITOVSKY: Being the last speaker at a session that ends a long and tiring day, I am in no state to embark on a scholarly analysis; and you, probably, are no longer in a state to listen to such. Besides, I have not much quarrel with the theses presented in the two papers. So I shall just elaborate on a remark of Professor Dillard's and make the very simple point that Keynes has very much simplified economic theory, rendered it more realistic, and has thereby given the further development of economics a tremendous push.

Professor Fellner is right, of course, in saying that most of the ingredients of Keynes's theory, and most of the policy conclusions as well, were known to many people before Keynes. As Professor Whitehead has put it: "Everything of importance has been said before, by someone who did not discover it." Keynes co-ordinated already known bits of economic theorizing, supplied some missing links, and created a coherent theory of employment out of it. To call this, as Professor Fellner calls it, giving a particularly effective formulation to known doctrines, is in my opinion an understatement.

One of Keynes's main contributions—and the one crucial for employment theory—was the notion of underemployment equilibrium. Maybe this has led to no insights that were new to Wicksell or Sir Dennis Robertson; but it has accomplished something much more important. It has rendered speculation about the level of prosperity and what determines the level of prosperity very much simpler than it has ever been; and it has established a common language and common ground between the economist and the public.

Let us bear in mind that before the *General Theory* unemployment was regarded as the result of friction, temporary disequilibrium, or the monopoly power of labor unions. This meant that the business cycle had to be explained within a theoretical framework that made no allowance for the possibility of variations in employment and income. It also meant that business cycle policy had to be formulated without the benefit of a conceptually satisfactory measure of prosperity, such as the level of income or output or employment. This may sound absurd to us today; but it was Keynes's *General Theory* that made us realize its absurdity.

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Many business cycle theorists did admit, of course, the possibility of unemployment. Pigou even used the percentage employed as an index of prosperity; but this was a concession to common sense rather than an integral part of the theory. The price level, the degree of roundaboutness, the proportion of investment in total output—these were the theoretically important variables in terms of which the business cycle was measured and explained. Hence, to be a competent business cycle theorist by the standards of the time, one had to master the nebulous concepts and teutonic complexity of capital theory. No wonder if most people shied away and only the very

best, such as Wicksell or Sir Dennis, managed to evolve business cycle theories and policies that have stood the test of time. The great majority of economists settled down to a kind of schizophrenia. They believed in and taught a logically elegant price theory; and at the same time they adhered to a monetary and business cycle theory that was sometimes good, sometimes bad, but almost always incompatible with their price theory.

Keynes's concept of underemployment equilibrium has changed all this. It has harmonized, or at least rendered compatible, price theory and employment theory; and it has made employment theory simple. Let us bear in mind that this is the part of economics that is the most relevant to human welfare and human suffering, and it is thanks to Kevnes that this humanly most important part of economics has become simple enough to be taught in introductory courses to elementary students. I think it is very important to be able to show the relevance of economic theory to human and social problems at an early stage. After all, young people become economists, notor at least I hope not—with a view to raising their earning power, but out of an idealistic concern with human and social problems. In the days, however, when I was a student, a young man would spend years in studying indifference maps, budget lines, elasticities of substitution, marginal this and marginal that; and only when these studies have ground away all his compassion for human and social problems, only then would he be considered ready for the higher mysteries of capital theory and business cycle study.

In the meantime, of course, we have learnt that employment and business cycle theory are not nearly as simple as Keynes and the early Keynesians believed. But we still have an employment theory; and we can still start out from a simple, universally intelligible, and almost universally accepted first approximation; and proceed from there to explore the higher complexities of the consumption function or investment function or of dynamic growth models. Thanks to Keynes, economic theory today is of a piece; and the economist need no longer live with an inner conflict between his theory and his common sense.

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With the same stroke with which Keynes resolved the conflict within the economist's breast, he has also eliminated the conflict between the economist and the public. The notion of underemployment equilibrium, the use of national income, or gross national product, or employment as the basic variable, have given the economist a language and a conceptual framework that the public understands and appreciates. This is not to say, of course, that today the public fully understands the economist. After all, the New Yorker, a short while ago, thought it funny that the Harvard Club of New Jersey should have introduced Professor Seymour Harris at a banquet as "an economist well qualified to tell you why there will be no depression and what to do when it comes." Obviously, we economists see nothing funny or incompatible in this at all.

Nevertheless, I do think that there is today closer contact and greater interaction between economists on the one hand and practical politicians and the public on the other. I realize that the economist's greater influence on practical affairs is, in the opinion of some, a mixed blessing; but you will surely all agree that the economist's greater awareness of his public responsibilities—his recognition of economics as a social science and not merely a logical exercise—is a good thing. And I cannot help feeling that Keynes had a large part of the responsibility for this aspect of the economist's attitude today.

### THE EMPLOYMENT ACT IN THE ECONOMIC THINKING OF OUR TIMES: A SYMPOSIUM

#### MODERATOR'S REMARKS

EDWIN G. NOURSE

The fact that the Employment Act of 1946 has now attained its tenth anniversary was appropriately celebrated last February by the National Planning Association through the holding of a commemorative dinner and the publication of a commemorative volume. The Employment Act Past and Future. I should like to "read by title" the papers of Professors John Lewis, Albert Hart, William Fellner, Roy Blough, Neil Jacoby, and James Tobin which appeared in that volume, commending them to you as a valuable addition to whatever we may present here today. In phrasing the title of our session—"The Employment Act in the Economic Thinking of Our Times"—it was not intended to suggest that that particular statute injected something novel and revolutionary into the economic thinking and action of the U.S. in 1956 or the late forties and early fifties. Rather should it suggest that when our national thinking has progressed to the stage where it expresses itself in such policy declarations as are contained in this statute it behooves professional economists to re-examine their concepts and their doctrines to see if they adequately come to grips with the problems posed for the policy-maker, public and private, by today's industrial society and whether our profession is giving these policymakers as much help by way of pertinent analysis and constructive suggestion as should be expected of us.

The program of this particular session attempts to balance the overview of employment goals and stabilized-growth devices against four segmental approaches, whose spokesmen all come from outside the ranks either of government or of academia.

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#### IDEAL AND WORKING CONCEPTS OF FULL EMPLOYMENT

By Edwin G. Nourse Washington, D.C.

A decade of experience under the Employment Act of 1946 has served to uncover many complexities that inhere in the mere concept of full employment—quite aside from the yet greater complications that beset the attempt actually to reach such goals as we may set up.¹ We need a concept that will be dynamic and at the same time realistic in that it views fullness of employment in perspective to the state of the arts—organizational as well as technological. It must recognize, but not accept as fixed, the institutions and the mores of our system of free enterprise and representative government. So oriented, it will envision goals high enough to gratify our sociopolitical aspirations but also be consonant with the limitations of means existing at any given time for their attainment. Thus my title links ideal with working concepts of full employment.

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At the outset we should differentiate between an economic concept of full employment on the one hand and sociological and political concepts on the other hand-without either ignoring or disparaging the latter. It is only natural that the burgeoning national interest in full employment should get political interepretations as such general abundance of jobs or such amelioration of particular unemployment situations as will quiet political unrest or promote party success. Likewise, with our long reformist tradition, it is bound also to be widely interpreted in sociological or moralistic terms, stressing the belief that, under modern technology, it is outrageous to see "want amidst plenty," or any would-be worker denied an opportunity to produce as fully as he can and will. These political and social considerations are not mere alternatives to or compromises with the more strictly economic aspects of policy and program, but should be discriminately integrated with them. Even so, the bed-rock upon which the structure of labor utilization must rest, if it is to prove both commodious and storm-resistant, can be discovered and cleared only by the tools of economic analysis. The economist as such must help his aspiring or demanding fellow citizens to learn and practice "the art of the possible" in a real world

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<sup>&</sup>lt;sup>1</sup>In the Review of Economics and Statistics (May, 1956, p. 193) I presented a descriptive and historical account of the emergence of the full employment slogan and some of the issues of interpretation that have arisen in practice.

where employment and production are determined within the quid pro quo of the market and the fisc—where general well-being is engineered from productive inputs.

Illustrative of the undue dominance of a sociological criterion is the definition of full employment offered by William Beveridge, widely accepted at the time and persisting in many quarters today. Starting from a social or ethical principle, he focused his attention on the subjective state of the individual rather than on the objective conditions of an economy in practical operation. On the title page of Full Employment in a Free Society we find the quoted aphorism, "Misery generates hate." In his opening pages Beveridge defines full employment as "having always more vacant jobs than unemployed men.... The labor market should always be a seller's market rather than a buyer's market." For this proposition, he says (page 19):

There is a decisive reason of prinicple. . . . Difficulty in selling labor has consequences of a different order of harmfulness from these associated with difficulty in buying labor. A person who has difficulty in buying the labor that he wants suffers inconvenience or reduction of profits. A person who cannot sell his labor is in effect told that he is of no use. The first difficulty causes annoyance or loss. The other is a personal catastrophe. This difference remains even if an adequate income is provided, by insurance or otherwise, during unemployment; idleness even on an income corrupts; the feeling of not being wanted demoralizes. The difference remains even if most people are unemployed for only relatively short periods. . . . The short-term unemployed do not know that they are short-term unemployed till their unemployment is over.

The implications of such a definition of full employment are farreaching. It sets a requirement which is impractically high, both quantitatively and qualitatively. By positing job opportunities "always" and "so located that the unemployed men can reasonably be expected to take them," it calls for an abrogation of inherent seasonality and entrenched geographic dispersion whose removal well might entail burdens and consequences more deleterious than the unemployment the policy was designed to remedy. Beveridge himself admitted that collective bargaining in a perpetual sellers' market for labor would entail "a real danger that sectional wage bargaining, pursued without regard to its effect upon prices, may lead to a vicious spiral of inflation." For this he recommended self-discipline within unions and compulsory arbitration as needed. Similarly as to prices, he hoped to see "all classes cooperate willingly, . . . adoption by the State of a price policy," and its implementation through monetary controls (pages 198-203). The requirement that everybody not merely have a job but that it be a satisfying job moves the goal even beyond the realm of sociology and into the domain of psychiatry. People are "demoralized" not merely by not being wanted at all or not all the time but also by not being wanted intensely enough. Spiritual frustration and political revolt come not merely to the unemployed but also to

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thousands or millions of those who have jobs but "feel that they are not wanted" in the right kind of job, in a congenial place, or with fair pay or satisfying prestige. (Another practical difficulty that lurks under the attractive surface of this definition is that it implies that jobs are to be furnished to workers "as is," absolving both employers and employees of that vigorous process of adjusting to ever changing conditions that is characteristic of an enterprise economy. Two examples of the nature of this pitfall may be drawn from actual American experience: labor union policies and practice in the coal fields and government programs for dealing with the problem of "too many farmers" by paying billions of dollars for the production of crops for which there was not a remunerative market.)

To say this is not to say that qualitative standards and sociological considerations have no relevance to the concept of fullness of employment opportunities in a progressive economy. It simply is to say that the formula "always more vacant jobs than unemployed men," whatever usefulness it may have had as a slogan to stimulate discussion of positive employment policies, is much too rarefied to serve as a practical test of private business performance or of national employment policy.

This sociological approach has much in common with the political approach to the employment problem exemplified in the "full employment bill" introduced into our Congress in 1945 by Senator Murray, supported by three other Senators. Section 2 of S. 380 read:

All Americans able to work and seeking work have the right to useful, remunerative, regular, and full-time employment, and it is the policy of the United States to assure the existence at all times of sufficient employment opportunities to enable all Americans who have finished their schooling and who do not have full-time housekeeping responsibilities freely to exercise this right.

In the press, in public hearings, and in Congressional debate there was spontaneous and vigorous challenge to so vague but at the same time so ambitious a concept of the labor force for whose full and "remunerative" employment the government should accept responsibility. It seemed to foreshadow a Provident State whose political pressures would supersede commercial bargains and market incentives. The Employment Act as finally passed sought to shift the matter back to a more practical basis by defining the goal of government policy as facilitation of an enterprise system that will "afford useful employment opportunities for those able, willing, and seeking to work." Emphasizing the shift from sentimental to operational criteria, the Congress established an apparatus of professional economic advisership in both the executive and the legislative branches of government. It devolves on the economist, therefore, to furnish interpretations of the full employment goal that will sublimate political pressures, temper

reformist dreams, and combine industrial and commercial workabiltiy with the scientist's ideal of systematic progress.

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The declaration of policy in the Employment Act does not specify full or even "maximum" employment as the single goal of national policy. There are in fact three broad objectives or criteria of action set forth, all of which have distinctly economic content: (1) employment opportunities for those able, willing, and seeking to work, (2) promotion of maximum employment, production, and purchasing power, (3) deference to "other needs and obligations and other considerations of national policy." But can the economist accept these three specifications as spelling out a consistent and tenable formulation of a full employment ideal or adequate working rules for national employment policy? I think not. Our profession has further work to do toward conceptual clarification.

1. The phrase, "those able, willing, and seeking to work," does not define a labor force for whose optimum utilization the federal government can, in good economic conscience, pledge itself to "utilize all its plans, functions, and resources." In the absence of objective criteria, the word "able" becomes practically meaningless. Whether a given person is, in a commercial or industrial sense, able to work is a decidedly relative matter. Able to work steadily or only intermittently? At the kinds of work for which demand presently exists, only with other skills. or without any particular skill, aptitude, or even teachability? Able to work as determined by a doctor's certificate or by a foreman's report? Under standard shop or office conditions or only with special facilities or treatment? Equally rich in ambiguity is the companion term "willing." It was inserted as a gesture of reassurance to those who feared the camel of authoritarianism might be getting his nose under the tent of free enterprise. But does it mean willing to work at such jobs as are available or only at the job of one's dreams? Willing to work on a time schedule dictated by employers' needs or by workers' convenience? Seeking is, of necessity, the criterion relied on by the Census Bureau in giving us a monthly estimate of involuntary unemployment. But "wanting" would be a more apt term for our purpose since it is a commonplace in the experience of all who have dealt with the unemployed to find not a few persons who want work-may even need it desperately—and who yet are not actively seeking a job because they have become convinced that the search is hopeless.

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The plain fact is that the size of our labor force is statistically determinate only within the limits of quite categorical definitions. While there is a substantial hard core of fully competent and persistent

breadwinners, it is completely surrounded by fringes of adolescents, casuals, housewives, and the aged or handicapped, who freely add themselves to or subtract themselves from the ranks of job seekers as circumstances change. (Theoretically, it might seem that there is much to be said for the suggestion sometimes made that we should differentiate and account separately for a primary labor force of the regulars and a "secondary labor force" of part-time workers and those requiring special treatment. But such classification would pose great practical problems. The statistical breakdowns now being developed would seem to be sufficient to reveal all the nuances of the problem that are manageable for purposes of general policy making, whereas the diverse conditions among those who would conceptually fall into a secondary labor force need to be dealt with on a local or ad hoc basis—including union contract clauses and individual employer ingenuity.) Like other statistical time series the CPS monthly unemployment estimates are useful to show direction of movement and to give some indication of its speed or intensity. But quantification needs to be supplemented by much qualitative analysis and discriminating breakdowns. An aggregate figure purporting to show the level of unemployment is less illuminating for purposes of economic policy and action than detailed information as to the structure of unemployment. Timely notice of the character and rates of hirings and lay-offs is more pertinent for policy making than an official estimate that the national aggregate of unemployment amounts to a certain percentage of a categorically defined labor force.

It is only natural that some kind of rule of thumb should have a good deal of popular vogue. Alvin Hansen, in his definition of full employment presented in Economic Policy and Full Employment (page 19n.), opined "in an economy as large as that of the United States, it is probable that at 'full employment' there would be at any one time between 2 and 3 million temporarily unemployed." (About 4.5 per cent of the civilian labor force of 1945-47.) Paul Douglas in 1952 commented on Beveridge's use of a 3 per cent margin for seasonal and transitional unemployment that such a criterion would be "fatal" here. "To use deficit financing to drive unemployment down below 6 per cent is very dangerous. It will tend to do far more harm through inflation than the good it will do by abscrbing those who are unemployed from seasonal and transitional causes." (Economy in the National Government, page 253.) In February, 1955, Arthur Burns, replying to a query from the Joint Economic Committee said: "Although 4 per cent of the labor force is nowadays widely regarded as an approximate measure of the amount of frictional and seasonal unemployment, the Council has not favored this or any other rigid figure to serve as a trigger to governmental action or as a measure of good performance." (Hearings before the Joint Committee on the Economic Report, 1955, page 45.)

Probably more useful than any single norm to be striven for is a concept of "peril points" to be avoided, such as 2 per cent unemployment as a warning of inflationary overemployment, overextension of credit, or overinvestment, and 4 or 5 per cent as alerting prompt investigation of causes—whether the sort of disturbance that seems likely to "blow itself out" in due course or, contrariwise, to have a snowballing quality or reveal a geographical concentration that points to the need of specific local relief measures or such dispersion as suggests the resort to generally-acting national policies.

A trend in our thinking under the Employment Act toward emphasis on analysis of the quality or structure of unemployment is clearly reflected in the work of several statistical bureaus. Besides its master figure covering all those seeking and not finding jobs, the Census Bureau presents several breakdowns such as age and sex, agricultural and nonagricultural, wage and salary workers, self-employed and unpaid family workers, full-time and part-time, and duration of unemployment. It also reports on seven reasons for not working: temporary lay-off, new job or business, bad weather, industrial dispute, vacation, illness, and "all other." The Bureau of Employment Security of the Department of Labor reports monthly on the number of persons receiving unemployment insurance benefits under all programs and the percentage they are of all "covered" employed. The Bureau of Labor Statistics issues monthly reports of actual employment gathered from 155,000 employers, covering about 50 million workers, with totals broken down by industrial groups, by states, and by local areas. Within limits of funds and trained personnel, the regular reports are supplemented by spot studies of critical situations.

All this (supplemented by current data from several state departments of labor) gives a reasonably good three-dimensional picture of the current and short-trend state of labor utilization. Illumined for the President and Cabinet by the analyses of the Council of Economic Advisers and for the Congress by its Joint Economic Committee, it provides a pretty adequate and reliable factual basis for their consideration of economic policy. But it contributes no value judgments as to whether this state of employment is too low, acceptable, or perchance too high to meet Employment Act objectives.

2. Second among the Employment Act's directives we find "maximum employment, production, and purchasing power." Does this tripartite formula give the policy-maker a clear and consistent criterion

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for measurement, for judgment, and for action? I think not. The terms are both ambiguous and ambivalent.

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Besides uncertainty as to who shall be counted in the labor force, just discussed, there is complete obscurity as to how many days or total hours of work are called for. Economists have long accepted transitional or, more broadly, frictional unemployment as indigenous to and ineradicable from an economy of rapid technological progress; free enterprise, and free choices of both consumers and workers. Seasonal unemployment stems in part from the same causes, with weather as an important additional factor. Maximum employment in economically ideal terms would call not for the elimination of these categories of temporary idleness but for the fitting of fractional work years together into the largest practicable total and the use of as many marginal work capacities as possible rather than letting them run to waste as "unemployable." This raises the whole issue of work versus leisure, which will be discussed later when we consider alternatives. But first, are maximum employment, maximum production, and maximum purchasing power mutually compatible, complementary, or conflicting desiderata?

It seems clear that a policy that resulted in giving a job to everyone who might seek work or just be "willing" to work would put many on the payrolls who were submarginal under any standard of business management geared to maximum production—of wealth, that is, not merely volume of goods. It follows, then, as a matter of sheer economic logic that if aggregate demand for workers is raised to a level where there are "always more vacant jobs than unemployed men," marginal product will frequently be less than the cost of the last increments of labor—most of which must be paid for at standard wages. not a marginal price. Even under the conditions of mildly inflationary boom that we have witnessed over considerable areas of the economy during recent years, "scraping the bottom of the manpower barrel" has entailed expenses of recruitment, training, absenteeism, spoiled work, and lowered morale that have raised unit costs direct and indirect until they probably exceeded in some instances the unit value of added product. Whether one looks at this as overemployment leading to inflation or as inflation leading to overemployment, it is clear that the choice of the economist as such between maximum employment and maximum production must ordinarily (and subject to the qualifications and alternatives discussed later in this paper) fall to maximum production. It is an encouraging aspect of the economic thinking of our times as it bears on the effectuation of the Employment Act that the oversimplified goal of full or maximum employment is to so great an extent giving way to maximum production and the new formulation "economic growth." Yet more suitable is the expression "economic progress" that we at Brookings used.

Unlike the incompatibility between maximum employment and maximum production, the latter is entirely compatible with maximum purchasing power—if this is properly interpreted as power of consumers to command goods, not merely as a bigger flow of dollars through the market and government treasuries.

• 3. The third of our excerpts from the declaration of policy tacitly recognizes that sound interpretation of the Employment Act involves choices among alternatives which cannot be simultaneously maximized. It specifies that the maxima to be sought shall lie within the ambit of the country's "other needs and obligations and essential considerations of national policy." Besides this general caveat, there is the specific proviso that the full employment or maximum production goal is to be sought "in a manner calculated to promote free competitive enterprise." To elaborate and refine these sweeping phrases into meaningful and mutually consistent parts of our full employment philosophy and practice will demand answers in two of the most controversial areas of economic discussion today.

First, as to free competitive enterprise. Each of these three words invokes value judgments. On the face of it, the use of the word free represents a codification into the act of our traditional rating of personal and group freedom above mere material enrichment. This is value judgment both political and sociological in nature, though it rests also on belief, both lay and professional, in the superior economic efficacy of free enterprise. But how free can strong and aggressive individuals or groups be left to pursue their private interests without the interests of workers and consumers suffering? In a modern industrial economy choices have to be made between degrees of freedom, not only of employer groups to displace workers, but also of labor groups to protect jobs if the ends of maximum production and consumer real purchasing power are to be served. The dilemma of freedom or control is provisionally resolved by a wide range of compromises. Traditionally, the American worker, urban and rural, has stoutly asserted that he would hold to freedom of choice as to whether, when, or how to work in lieu of larger labor income. However, both farmers and industrial workers have in many ways, but with uncertain degrees of finality, given up considerable areas of this pristine freedom for the tangible or imagined benefits of farm price supports, standard wage laws, and whatever controls are entailed in voluntary union membership or the strictures of union shop, closed shop, or hiring hall.

Similarly, can our profession supply either clear-cut criteria or compelling insights to guide our national choices between types of competition that tend to maximize productive employment and those that curtail it, or between private and public expressions of economic enterprise? The Employment Act challenges us to supply the policy-maker both with formal ideals and with workable *ad hoc* approximations covering these issues.

Important as is this three-dimensional area of policy choices among freedoms, forms of competition, and channels of enterprise—to our promotion of sustained maximum production, still more baffling ambiguity and ambivalence confront us in the Act's qualification of the full employment goal by such phrases as "general welfare . . . needs and obligations [of the federal government] . . . and other considerations of national policy." Space does not permit even the outlining of the multifarious issues that are suggested by these broad phrases. But both economists and businessmen most often invoke them on one side or the other of the argument over fullness of employment vis-àvis stability of the dollar. As a mere verbal matter, resolving this inflation issue might seem easy and obvious: follow policies of freer private and public spending to stimulate employment up to but not beyond the point where further pressure raises the index of prices rather than the production index. But such a criterion becomes distressingly amorphous once we look at its terms more closely. As already noted, the actual fullness of employment is objectively indeterminate—a matter of opinion of the policy-maker, the interest-group spokesman, even the individual. Likewise the point at which price changes up and down in varying degrees become inflation with a capital "I" is indeterminate or relative to conflicting definitions of the term.

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But even with both goal posts shrouded in fog, economists should have no great difficulty in deciding which team they are playing on. There have been increasing signs in the economic thinking of our times—that is, times of postwar prosperity and protracted boom—of belief that a persistent inflationary creep should be the consciously chosen alternative to intermittent or marginal nonuse of potential labor. It is argued that adequate growth of the economy cannot be attained except through the injection of new money each year. Proponents of such a view would keep this accelerator pedal pressed to the floor boards, reposing confidence in the brakes to hold in any emergency and trusting also that momentum will not carry the car off the road even when brakes are doing all that is physically possible. They expect the Congress to "fill 'er up" regularly and to reline the brakes whenever needed or

install new ones of more powerful design—that is, "controls." In the other camp are those who rate inflationary dangers as greater and offsetting controls as ultimately self-defeating.

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To this issue we shall return later, but by way of partial summary here: to review the complicated and in many ways obscure language of the Employment Acts's policy declaration in the light of ten years' experimental interpretation is to make one thing clear. Even an ideal concept of full employment is not a simple matter of counting noses of an objectively determined labor force and statistically measuring an "unemployment gap" between this roster and some glorified "Help Wanted" column. And working concepts for the actual policy-maker involve assumptions or hunches about most if not all the major areas of economic theory. Some of the major issues to be encountered as we struggle for the best working programs in fast-changing situations can be most usefully envisaged in the context of short-run versus long-run concepts of full employment.

#### III

On the face of it, the time perspective of the Employment Act is short run. The apparatus of an annual economic report and program submitted by the President. its review by the Joint Economic Committee, and the submittal of this Committee's report to the Congress focuses attention on present alternatives and a model for the current year's legislative action and the parallel programming of private business. Of necessity, the measurements of unemployment which the President and the Joint Committee take over from the various statistical bureaus must take as "given" such things as the character of the labor force, the state of the arts as this affects the functioning of labor in the productive process, and the whole institutional situation as it mediates incentives to work, contractual terms regulating the work week and work year, and many others. But any adequate concept of the fullness of employment toward which we could wisely strive cannot, in a society such as ours, take those givens as given "for keeps." As vital factors in the problem, their endogenous evolution must be perennially studied and their exogenous determinants progressively shaped toward the attainment of that pattern of labor utilization most acceptable to an enlightened society of laboristic capitalism. In other words, the employment problem itself undergoes a perpetual recasting in the highly dynamic conditions of our technology, our market structures and practices, and our changing ideas of the optimum role of government.

The Economic Reports of the President and the voluminous documentation emanating from the Joint Economic Committee have, fortu-

nately, reflected the economic thinking of our times, both professional and lay, in that they have not limited their concept of maximum production and maximum real purchasing power to such goals as these officials thought might be attained under the conditions presently obtaining. On the contrary, they have boldly reached forward to consider how those conditions might, over time, be so altered as to permit higher maxima for larger numbers of people. The first chairman of the Joint Economic Committee chided the President and the Council of Economic Advisers for including such "reform" proposals in the first Economic Report of the President. Subsequent reports, however, have given more rather than less emphasis to the long-run interpretation of the full employment concept, and this tendency has been at least as marked in the work of the Joint Committee and its subcommittees.

Under pressure of time I shall mention only four of the problem areas that seem to me to be outstanding in the longer term aspect of the full employment concept. The first of these relates to the distribution of the work load in a long-run maximum-production economy. There is no need in this audience to dwell on the sweeping changes that have already taken place during the growth of modern industrialism: (a) the increasingly fuller participation of women in the productive process, (b) the withdrawal of children and adolescents more and more from the burden of regular jobs to permit fuller physical maturing, mental growth, and highly specialized training of the most gifted for leadership posts in science, management, and the arts, (c) for adult workers, the shortening of the work day, the lengthening of the weekend break, and an increase in the number of recognized holidays and in the prevalence and length of annual vacations. In terms of the distribution of the economy's work load, this means greater concentration on the middle-age brackets and greater freedom from work of the young and the old, but more even distribution within the middle brackets both between men and women and between rich and not-rich—i.e., the virtual disappearance of an "idle rich" class. An enlarged problem of the employment of the handicapped has grown out of the casualties of two world wars and Korea, a succession of polio epidemics, and the rising tide of automobile accidents. A tenable long-run full employment policy would certainly include an intention to use as many as possible of these fractional manpower motors. It would have also to contemplate employment opportunities on a steppeddown basis after technical retirement, and some revision of the utilization scale of the young to provide more intensive training of the really capable and less time wasted by and on the mediocre and inferior.

This brings us to our second long-run issue: the choice, private and

public, between work and leisure in a free society. If the economy were organized on a basis of self-employment, the individual could decide—by whim or by thoughtful calculus—when he would work and when he would knock off for either rest or recreation. He still is free to decide when he will seek work or guit his job. But the concept of optimum employment that we are evolving in our highly organized industrial society is formulated to an important extent through the institutions of unionism and the controls and the competitive practices of corporate and other employers. It is shaped also by the legislative and administrative actions of government, notably social security provisions. The economist's tools offer little to the individual in resolving his choices of alternatives between his kind of work and his kind of leisure. They offer rather more to the policy-making officials or committees of labor unions in evaluating the consequences of their group decisions in specific cases or the general pattern of organized labor's wage-and-hours philosophy, collective bargaining strategy, and political pressures. But primarily the economist's analyses are pertinent to the issue of what division between work and leisure will maximize the economy's production of ultimate satisfactions for the total population —in other words, the best public policy as to work versus leisure.

In this broad area of labor-management negotiation and government legislation, two issues are sharply defined as today looks forward toward tomorrow's employment goals. (1) Is our objective the filling of a quota of 2,000-hour jobs (that is, eight hours times five days times fifty weeks), or shall we be satisfied with a full roster of workers for only six or seven hours a day or perhaps a work week of four days? The unions are increasingly lining up for a campaign for the shorter work week and still longer vacations. (2) A second issue as between work and leisure concerns age at retirement. Shall we, through social security rules and otherwise, set the end of the period for which employment is to be kept full at 62 years or 60 years or even 55? This brings us back to the discrepancy between "maximum employment" as mere number of jobs and "maximum production" as total volume of consumer satisfactions. A sound long-run concept of optimum fullness of employment demands careful and continuous study of the functional relationship between work and leisure over the whole lifetime of worker-consumers under changing conditions of technology and of longevity. Only two practical aspects of this complicated issue can be mentioned here.

The first is that leisure is not simply nonwork but is, to a considerable extent, alternative activity. This both adds to the supply of consumer goods and creates demand for production of goods and services for the commercial market. In a rich and highly productive society,

many business enterprises are directed to supplying goods or services desired not for subsistence needs or refinements but for the filling or killing of leisure time. To paraphrase the old adage, "One man's meat is another man's poison," we may say that some workers' leisure is other workers' livelihood. This is conspicuously illustrated in our flourishing amusement industries and in "tourism." But what may not be so well recognized is that expanded leisure leads to the growth of a great area of social productivity outside the statistically recorded market area. With the growth of the factory system, a great deal of direct want satisfaction moved out of the family circle into the ambit of the market. Now a more leisured working population is enlarging the social product far beyond what the commercial figures show—in a vast "do-it-yourself" movement. However much of home improvement or life enrichment is thereby produced, it eludes the computer of our GNP. As between employment and leisure, the progress of technology, the processes of collective bargains and of legislative standard-making keep nudging both employer and employee toward employment patterns that are both workable and acceptable (within the personal adjustments made through supplementary jobs, part-time work, and do-it-yourself activities).

A second complication in working out a long-run criterion of choice between work and leisure in our employment policies derives from the conflict between the group interest and the general interest. This is conspicuous in the drives for the shortening of the work week, the work year, and the working lifetime already referred to. It is not altogether clear what use the unions expect their members to make of added leisure or what values they attach to such uses. Neither is it very clear where management calculates that the benefits and burdens will fall if they compensate for, or themselves induce, this shortening by automation or other laborsaving devices. But that consequences to the group and to the economy or society are widely disparate is evident. (For instance, under the pension provision of some union contracts—and still more under prospective guarantees of an annual wage—it is to the advantage of the employer, when demand is brisk, to operate on an overtime basis rather than take more men on the payroll. This tends to create a very refractory unemployment situation for the more marginal workers—untouchable by the stimulative effect of an increase in aggregate demand.) Even viewing ours as a laboristic economy, it should be clear or even axiomatic that the level of consumption for workers and their dependents as a whole cannot be raised as high in the long run, and under whatever technological condition emerges, with a shorter work year and working lifetime as it could with a longer work-input period. The heaviest impact of the loss would, I

believe, fall on those now in the lower consumer levels of our population—and on backward nations whose advance we might aid most strongly and most comfortably in proportion as our own production was really maximized.

A third broad aspect of a long-run full employment concept can be no more than mentioned here. If full employment means maximum production and maximum real consumer purchasing power over time, it obviously implies continuous physical and mental improvement of the labor force and its progressively better equipment and organization so as to develop its full productive potential. Here again we encounter conflict between the economist's nonpartisan concern for maximum production by the economy and the acquisitive class interest of corporate employers and unionized workers. Unions have gone a long way toward recognizing the self-defeating character in the long run of restrictionist practices with reference to such things as apprenticeship, labor stints, and the introduction of machines and, today, automation. Employers as well as unions support programs for better education and training of the labor force. Employers also make a rather sophisticated argument as to the equipment phase of labor productivity, that every step toward scientific management and technological improvement contributes pro tanto to the welfare of the economy. Economists sometimes respond that this is not necessarily so if the rate of capital intensification is not neatly timed to the rate of labor reabsorption; that is, if labor saving results in labor wasting. (See Price-making in a Democracy, Chapter IX.) This issue has been aired repeatedly in hearings of the Joint Economic Committee as a debate between advocates of a "trickle down" theory of maximum employment and production (starting from capital formation) and those who adhere to a "trickle up" theory (starting from consumer purchasing power). We may be sure the argument will continue, since it cannot be unanimously resolved either by dictum or by proof. It involves informed choices between degrees of complementary desiderata in concrete situations that are in constant flux.

Much the same may be said of the fourth of our long-run interpretations of the full employment concept: the choice of fuller employment at the cost of a higher price index or a cheaper dollar. The matter has already been alluded to as a dilemma dimly envisaged in the policy declaration of the Employment Act as it juxtaposes full employment against "other needs and obligations." But it is, in my analysis, in fact the paramount issue or the comprehensive policy decision in which all segmental issues (ex noneconomic value judgments) must be comprehended. For the economy is an infinitely complex system of pecuniary relationships of costs, prices, incomes, spendings, savings, invest-

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ments, and taxes, which both express and condition a physical process of making goods and rendering consumer services. The elusive and controversial terms inflation, stability, and deflation are the semantic symbols by which we seek to objectify the optimum condition of that process which national policy and program should promote and the dual dangers that it should strive to avoid. If, as I have argued, ideally full employment would be such as promotes continuous maximization of production and real purchasing power for the people, it cannot be attained in the face of any disturbance in the monetary mechanism that would be harmful to business activity and general spending and saving for capital formation.

Those who ignore or belittle inflation threats and who champion an extremely high employment goal at all times seem to me to deny the practical necessity of appreciable frictional or transitional unemployment which they themselves formally accept as a premise of business life in a highly dynamic industrial society. Underemployment on farms during the current basic readjustment of the industry, unemployment among highly immobile coal miner groups, and substantial idleness of automobile workers while some egregiously bad mistakes of management are being corrected afford cases in point, but of the second order of magnitude. It is in the longer and wider swings from boom to equilibrating correction that the major and really fundamental issue lies. It demands realistic recognition of a state of overemployment at the crest of an investment cycle that scrapes the bottom of the manpower barrel and stretches credit beyond the safe support of individual and institutional saving. It demands recognition of the inevitability of some increase in the volume of unemployment during the offsetting period of slower plant expansion and durable goods accumulation—a transition less severe in proportion as overinvestment and overemployment are avoided in the boom period. It is when we dream of economic perpetual motion and the miraculous elimination of these frictions rather than patient lubrication of the transitions that we invite inflation or the impairment of the monetary mechanism whose smooth and dependable operation is a sine qua non of maximum long-run production or economic progress in a free-choice economy.

It is not enough for the advocates of "high pressure economics" to argue that inflation can be kept in check by the use of general or spot controls. That is simply to declare a value judgment in favor of maximizing the number of jobs or the rate of economic expansion even at the cost of less freedom of economic choice by individuals or organized groups. Our freedom of individual choice has already been eroded at many points through concentration in the hands of policy-making officials of national bargaining unions and top executives of adminis-

tered-price corporations. It becomes all the more important that the degree of decentralization still remaining shall not be swallowed up in monolithic decisions of government control agencies. It behooves these proponents of high pressure economics, therefore, to abstain from such ambitious definitions of full employment or of business expansion as will engender a degree of inflation that will call for the imposition of controls on prices, wages, or investments.

Since the baleful effects of inflation and the insidious nature of its onset have been so amply demonstrated in a variety of circumstances and places in the past, and since the effective strength of the available arresters or correctors has never been really tested under strain, I cannot accept inflation as a way of life for the long run even though emergency measures of an inflationary character can be used both prudently and safely in the short run.<sup>2</sup> Equally eschewing doctrinaire full employment at whatever cost and an ever balanced budget at whatever cost, we should make intensivity of labor utilization a contingent factor within our total technique of so administering our free economy as to move it consistently and persistently, even if not at an absolutely steady pace, toward maximum real income for the whole people.

I am quite aware that many will not go as far as I do in refusing to accept price inflation or even price-level stability as the only solutions theoretically possible to the problem of full employment and economic growth. But there is nothing in the mechanics of a truly competitive market economy that precludes maximum production and vigorous growth with diverse movements of individual prices adding up to a price level having a moderate but persistent downward slope in a society of high scientific and managerial attainments. This would constitute an exemplification of Say's Law-modernized; that is, operating under astute large-unit administration rather than small-scale automaticity. Turning from mechanics to psychology, I would concede the point to those who maintain that businessmen in their present environment cannot or will not operate on such broad policies of social benefit and that labor leaders must exploit group strength and strategic position aggressively if they are to survive in policy-making posts. (But even Mr. Reuther, of the aggressive and strategically placed automobile workers, has recognized the self-defeating character of the

<sup>&</sup>lt;sup>2</sup> Alongside Jacob Viner's deprecation of "full employment at whatever cost" (Quarterly Journal of Economics, August, 1950) we may place the comment of Arthur Burns, made after he had for several years wrestled with the practical problems of interpreting the Employment Act: "In a high level economy such as ours, it is but a narrow road that separates recession from inflation. . . . If we are to advance firmly on that road, the Federal Government . . . alert to changing conditions must pursue monetary, fiscal, and housekeeping policies with skill and circumspection [to the end of balancing] reasonable fullness of employment with reasonable stability of prices." (Address before the Chamber of Commerce of the state of New York, New York City, October 6, 1955.)

inflationary process of wage-price "leapfrogging" when he laments that hard-won wage increases are "paid in wooden nickels.") In the long-run context in which I am here speaking, the acceptance of an anti-inflationary or constructively deflationary policy might not require any more revolutionary change in the mores of business (including labor) administration and in our business institutions than today's policies and practices mark in contrast with those of the 1880's. Though there would be less proximate gain from technological and organizational innovations accruing to those capitalist or labor groups who happened to be most strategically placed or most aggressive, the translating of productivity gains predominantly into lower prices would so maximize real purchasing power en masse as to maximize employment on a maintainable operational basis of free competitive big business enterprise. A better alternative than complacent inflation backstopped by standby controls is the self-discipline of groups under increasingly sophisticated leadership seeking to advance their group interest through promotion of a self-sustaining price-income structure competitively shaped to maximizing employment because it maximizes consumption. Toward such a goal the Employment Act, with its socially oriented intellectual apparatus, will, I believe, mark an important milestone.

By way of brief summary, I offer three general propositions:

- 1. Today's economic thinking about employment policy shows substantial movement away from such simple quantifications of the early forties as "60 million jobs" or an unemployment gap in explicit numerical terms or as a sanctified percentage. Substitution of the concept "economic growth" moves in the right direction, but to specify that growth must be by annual increments of, say, 20 billion dollars in GNP or that "no previous year is good enough" is no more tenable than the earlier formulas of "more jobs than unemployed men" or "jobs for all the people all the time."
- 2. Combining long-run ideals with short-run working programs places emphasis on qualitative analysis of the intensivity of labor utilization as one facet of a complex objective of sustained economic progress in which choices, priorities, and proportions must be carefully evaluated in their time perspective, seeking self-sustaining patterns of economic growth with only moderate changes of pace and with minimum resort to emergency interventions.
- 3. The sharpest issues of official and individual choice lie between consumer satisfaction (over-all or by groups) (a) vis-à-vis freedom of action, (b) vis-à-vis leisure and its distribution and use, and (c) vis-à-vis stability of the monetary unit. Vis-à-vis rather than versus

# STABILIZATION POLICY AND THE STUDY OF BUSINESS CYCLES

By ROBERT A. GORDON University of California

In terms of results, American stabilization policy since passage of the Employment Act has been more than moderately successful, and this success has been accompanied by the feeling that we know a good deal more about the causes and cure of economic instability than we did before the war. The record of relative stability and rapid growth is there for all to see, and the feeling of greater knowledge and of firmer control over the forces making for instability is to some extent justified. Yet it is paradoxically true that the contributions which business cycle theory has made to policy in the last ten or fifteen years have, on the whole, been very modest, and we still lack a clear understanding of the forces making for instability in the American economy.

### The Stabilization Record Since the Employment Act

It is not necessary to linger over the record of success in achieving the stated objectives of the Employment Act. There has been no major depression since the thirties, and we have in effect maintained a full employment economy—or something close to it—since the early years of the war. Since the war, also, real output has grown at a gratifying rate (although with interruptions during the two mild postwar recessions), and the fruits of prosperity have been more widely distributed than ever before.

Some have argued that a more vigorous attempt to obey the Employment Act's injunction "to use all practicable means" might have led to even faster growth and an even lower average level of unemployment. Here there is disagreement. The more general—and apparently the official—view is that persistent attempts to achieve still higher levels of employment and production through monetary and fiscal policy would have worsened the record with respect to price stability. It is on the side of prices that the stabilization record is weakest. The consumers' price index now stands some 50 per cent above the level prevailing at the time the Employment Act was passed. Despite the five years or so of price stability following the Korean upsurge, inflation has remained a more or less continuous threat. Even so, the record of price stability in the United States has been better than that of most other countries.

How do we account for this relatively successful stabilization record? The odds are that chief credit for the excellent performance of the American economy should go, not to the Employment Act and not to the virtues of conscious stabilization policy under the Act, but to the characteristics of the economy itself during the postwar period.<sup>1</sup>

Among the characteristics of the economy that supposedly make it more immune to serious depressions than before the war, the ones most often cited are: the automatic stabilizers, deposit insurance, long-term capital budgeting by industry with the result that private investment is supposedly more stable in the short run than before, the improved liquid asset position of business and households, the widespread use of amortized mortgages, the support to private investment from the greatly expanded research programs undertaken by industry and government, the high level of government expenditures, and, not least, the acceptance by the federal government of responsibility for maintaining a high level of employment (with resulting more) favorable and less volatile expectations by business firms and households). To these I should add general recognition of the downward inflexibility of the cost-price structure, the more equal distribution of incomes, and perhaps other structural changes that have affected the relation between consumption and disposable income.

We should note two points about this array of stabilizing elements. First, except for the government commitment to a high level of employment, they represent changes which have come about mainly or partly for reasons other than their effect on economic instability. Their stabilizing effects are in good part a by-product. Secondly, we have only the roughest sort of idea of how much of a contribution to stability these changes have made, either separately or in combination. Our ignorance as to the possible magnitude of stabilizing effects is least marked in the case of the automatic stabilizers.

Once in a while we also hear mention of some changes that may have a potential destabilizing effect—for example, the rapid rise in installment and mortgage debt, the thin equities of many home owners, and the greater importance of "discretionary" spending, particularly on consumers' durables.

All of this has to do with the susceptibility of the economy to deflationary influences. In the other direction, it seems to be widely assumed—but there is by no means complete agreement—that the economy is more susceptible to inflationary pressures than it was before the war.

<sup>&</sup>lt;sup>1</sup>This view will be found in a number of the contributions to Gerhard Colm, ed., *The Employment Act Past and Future: A Tenth Anniversary Symposium* (National Planning Association Special Report No. 41, 1956).

To come back to the stabilizing elements. We simply do not know how much credit they deserve for the absence of a serious depression in the last eleven years. It is my own view that their influence so far has been swamped by what we may call the autonomous stimuli and supports to aggregate demand. These include the postwar backlogs, the population upsurge, the investment opportunities opened up by technological change, by the rise in incomes, and by new living patterns, government supports to housebuilding, the impact on state and local expenditures of the accelerated increase in population and movement to the suburbs, the higher level of federal expenditures, and so on. Investment opportunities have remained large throughout the postwar period, and, for this and other reasons, the inducements to exploit these opportunities have also remained favorable.

Discretionary stabilization policy deserves some but limited credit. On a number of occasions the right thing was done at the right time, and in most but not all cases for the right reasons. Equally important, we have so far been spared major blunders in stabilization policy under the Employment Act—in itself a great deal to be thankful for.

But, as others have noted, we have succeeded in maintaining a stable economy during the last decade without being too sure that we could continue to be equally successful in the future. This is an area in which there is still a wide gap between our goals and the knowledge necessary if we are to pursue these goals with confidence. The remainder of this paper is largely concerned with the nature of this gap.

## Analysis and Policy in the Field of Stabilization

The formulation of an effective stabilization policy entails two stages of economic analysis. First, the policy-maker must know something about the dynamic properties of the economic system whose fluctuations he is trying to control, whether or not he consciously carries out his analysis in explicitly dynamic terms. This is necessary so that, given the recent and present behavior of the variables assumed to be relevant, conclusions can be drawn regarding the probable movement of the "target variables" during some period into the future.<sup>2</sup>

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Secondly, the policy-maker must make enough additional assumptions about the relevant structural relations of the economy so that he can judge the probable effects on the target variables of alternative policy measures available to him. In Tinbergen's terms, he must know something about the relations between the "instrument" variables (subject to policy decisions) and the target variables such as employment, output, prices, etc.

<sup>&</sup>lt;sup>2</sup> The term "target variables" is borrowed from J. Tinbergen, On the Theory of Economic Policy (Amsterdam, 1952).

Both of these stages of analysis depend on a single body of knowledge—knowledge of the structural properties of the system in such detail that one can predict both the future movement of the target variables and also the effect on the target variables of any policy action taken to bring about results different from those that would have obtained in the absence of such action. But since these two stages are so often dealt with separately, both in the literature and at the policy level, we shall find it profitable to deal with them separately here also.

The first stage of analysis mentioned is concerned with diagnosis and prediction. This can be done in several different ways. First, we can try to construct and use a dynamic econometric model elaborate enough to include all the variables considered to be relevant. While econometric business cycle analysis has made advances since Tinbergen's pioneering work, it is obvious that, in the present state of our ignorance, we cannot formulate stabilization policy on the basis of this forecasting technique alone. It is interesting to observe Tinbergen's confession that, for policy purposes, "our statistical knowledge is hardly sufficient to apply [this] method numerically." I should add that the deficiencies in our knowledge are more than statistical.

The second prediction technique, which has its origins in the Keynesian analytical framework and the related form in which the national income accounts have been developed, rests upon what may be called the static form of GNP projection. Here a few aggregative relationships are combined with estimates of exogenous variables to form forecasts for future points in time. A good deal of theorizing and analysis of factual material can go into such predictions. What most needs to be noted here is that this sort of analysis is essentially static; important variables are taken to be exogenous (i.e., private investment estimated from surveys of planned expenditures); and the method does not involve a detailed knowledge of the dynamics of the system or a consistent set of hypotheses regarding the determinants of cyclical fluctuations. Put differently, a dynamic problem is converted into one in comparative statics, and dynamic relationships are bypassed by either treating some variables as exogenous, converting them into static form, or (in some cases) omitting them. (Estimates of exogenous variables may involve implicity a crude, intuitive sort of dynamic analysis.) One variant of this approach leads to so-called "gap analysis," which in one form or another has played an important role in the stabilization planning of a number of countries. Something of this sort seems to be called for by the Employment Act in this

<sup>&</sup>lt;sup>8</sup> Op. cit., p. 12. For a more optimistic evaluation of the possibilities of econometric forecasting, see C. F. Roos, "Survey of Economic Forecasting Techniques," *Econometrica*, October, 1955, pp. 363-395.

country, and there have been numerous complaints recently over the failure of the President's recent Economic Reports to continue projections of "needed levels of production and purchasing power."

The third method of diagnosis and prediction entails a combination of qualitative and quantitative analysis of recent and current economic changes, based on more or less precise notions about the dynamic characteristics of the economy and with the help of a very large dose of personal judgment. This technique has always played an important role in the President's Economic Reports and, of necessity, must always be used to some extent by the policy-maker. (We find a skillful use of it, with a quite accurate appraisal of prospects for the year ahead, in the January, 1956, Economic Report.)

Whichever of these methods is used,4 the result is a set of more or less qualified forecasts about the target variables. Given such forecasts, the policy-maker then proceeds to the second stage of analysis, to consider what the probable effects of alternative policy measures may be and to reach conclusions regarding what action (if any) is necessary to achieve the desired levels of employment, output, and so on. If action is judged to be necessary, this will involve attempts to affect some of the target variables either through changes in some exogenous variables or by altering some of the structural relations in the economy.

I think it is fair to say that our knowledge at this second stage of analysis is inadequately related to the sort of analysis that underlies the first stage of diagnosis and prediction. Our generalizations about fiscal and monetary policy are likely to be based on highly restricted and usually static models which are to some extent incompatible with the broader and more dynamic analysis that implicitly (or explicitly) lies behind the preceding diagnosis and prediction.<sup>5</sup> As Hart pointed out more than ten years ago, these models "tend to neglect factors of great importance for policy, and to make inefficient use of available evidence—primarily as the result of failure to be explicit about the relations of static to dynamic systems."6 This is particularly true, I think, of what we have in the way of accepted generalizations regarding the probable effects of various fiscal techniques. It is also true to some extent of our generalizations in the field of monetary policy. The "rediscovery of money" in the last few years has now been succeeded by new doubts and questions regarding the mechanism through which

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<sup>&</sup>lt;sup>4</sup>I have deliberately excluded a fourth method; namely, prediction on the basis of "barometers" derived from historical sequences or relationships with little attendant economic analysis. I have also ignored the "naïve" technique of projecting some function of past behavior. For a review of some of these methods, see Roos, op. cit.

<sup>6</sup> Cf. the similar remarks by Lundberg for the Swedish case in Erik Lundberg, ed., The Business Cycle in the Post-War World (London and New York, 1955), pp. 60 ff.

<sup>6</sup> From "Model Building and Fiscal Policy," reprinted in American Economic Association, Readings in Fiscal Policy (Irwin, 1955), pp. 308-309.

monetary restriction operates, the effectiveness of operating only on short-term rates, how far general monetary tightness can go without precipitating a downturn, the sensitiveness of different types of spending to different forms of monetary control, and so on. We need to do more to relate the analysis of the effectiveness of various stabilization techniques to the explicit and implied theorizing about business fluctuations that provides the basis for diagnosis and prediction.

This problem is made more acute by the way the first stage of analysis is used in current discussions of stabilization policy. The dynamic models implied in the work on diagnosis and prediction are highly incomplete. For example, variables which are obviously important for the dynamic behavior of the economy are taken to be exogenous, thus excluding the question as to how they are determined. Sometimes important variables and relationships are not included in the analysis. In addition, particular values or a range of values are implicitly assumed for some parameters which may in fact be related to other variables or to institutional arrangements which are themselves subject to change.

Thus, current diagnosis and policy conclusions are frequently predicated on the assumption of a continued high level of private investment and a weaker sort of downward cumulative process than we experienced before the war. Yet we have little in the way of an accepted theory of investment behavior to buttress this assumption. And, with respect to the cumulative process, theory in the postwar period has paid too little attention to expectations, price interrelationships, and all those other dimensions of the dynamic mechanism which help to determine how the economy responds to past change. As a result, we cannot say whether or when we shall have to cope with wider fluctuations than we have had to in the last ten years. Actually, we do not know much more about the determinants of investment behavior than we did before the war. There is also some question as to how much more we know about the cumulative process; preoccupation with the multiplier process and with constant relationships among a few physical aggregates have caused us to neglect the "old-fashioned" type of dynamic analysis stressed by Wesley Mitchell. As a result, we have made only a start in determining the effectiveness of various fiscal and monetary measures in the various types of cyclical situations that might arise.7

While we can be confident that the stabilizing characteristics previously mentioned have added significantly to the inherent stability

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<sup>&</sup>lt;sup>7</sup> Elsewhere I have tried to show why and how different kinds of stabilization policy might be appropriate for different kinds of cyclical contractions. See Universities-National Bureau Committee, *Policies to Combat Depression* (Princeton, 1956), pp. 7-25.

of the economy, we must admit that we cannot, with great confidence, say much more than this. This leaves us with the possibility that future downswings may range between the relatively insignificant declines of 1948-49 and 1953-54 and something less severe than 1929-32, and that they may be more or less tractable to the usual stabilization techniques. This still leaves a wide range.

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Similar areas of uncertainty and ignorance exist in our analysis of the inflation problem. How much inflation is now built into the American economy? What determines the rate at which wages will rise and how is this related to the volume of unemployment? How effective can monetary policy be in preventing inflation if there is an insistent upward pressure on wages, and how does the answer to this question depend on the cyclical behavior of the components of aggregate demand? Lundberg has commented that the biggest gap in our knowledge regarding the causes of instability is the lack of an adequate theory of wage determination (op. cit., page 77). Beyond this, we have only rough notions regarding the interaction of demand factors and cost-price factors in influencing price movements. Here again we find the stabilization authorities, of necessity, making their forecasts and policy decisions without adequate knowledge of essential dynamic characteristics of the economy. And in nongovernmental circles, we find dispute and uncertainty as to the significance for the future of the last several years of price stability.

What all this adds up to is that the present state of our knowledge has permitted us to operate not too unsuccessfully in the area of short-term forecasting; we know something about the possible effects of various stabilization techniques (although without distinguishing adequately between the effectiveness of such techniques in the different kinds of cyclical situations that might arise); and we are uncertain as to how much instability is still built into the system—how serious a depression might occur, if not offset, and how much of an inflationary bias, if any, we have to accept if we stay reasonably close to full employment.

All this clearly suggests that we need to sharpen our analytical tools and add as rapidly as we can to the body of knowledge on the basis of which both prediction and policy decisions must rest. In the meantime, we know that we can do much to keep the economy stable even in the face of as much ignorance as I have described—although this leaves us wondering on each occasion if we shall be as lucky next time.

<sup>&</sup>lt;sup>6</sup> This is not to imply that forecasting errors have not been made. The greater the degree of government intervention, the more detailed and precise must be the forecasting and the greater the opportunity for errors. In the case of the United States, a policy of relative nonintervention permits greater leeway in explicit or implied forecasts, the more so the more stable the economy turns out to be.

## Some Comments on Recent Cycle and Growth Theory

While not a few economists have offered to turn the business cycle over to the historians and archaeologists, the literature on business cycle theory continues to grow and in recent years has been liberally supplemented by writings on the theory of growth.

Time obviously does not permit me to review systematically the developments in business cycle theory during the last ten or fifteen years. One of the main points that needs to be made can be put in the form of a paradox. Hicks began his little book on the trade cycle with the perfectly sound observation: "Keynesian economics, in spite of all that it has done for our understanding of business fluctuations, has beyond all doubt left at least one major thing quite unexplained; and that thing is nothing less than the business cycle itself." This is because the Keynesian system is essentially static. Nonetheless, despite its limitations, the Keynesian static framework has probably been, directly and indirectly, more useful in contributing to the control of economic fluctuations than the contributions made to dynamic (or cycle) theory in the last two decades.9

For this there seem to be two main reasons. Recent business cycle theory has carried forward the main weaknesses of the Keynesian system: overaggregation, neglect of cost-price relations and expectations, assumed stability of the consumption function, and relative neglect of monetary factors. These are more serious deficiencies in business cycle analysis than they are in static employment theory. Secondly, recent cycle theory has been unsuccessful in coming up with a dynamic theory of investment determination that seems of much help in explaining the short-run behavior of investment. This has been particularly true of those models which put their reliance in the accelerator, whether linear or nonlinear, and draw a sharp line between induced and autonomous investment. The line opened up by Goodwin shows more promise. Here a rapid increase in investment opportunities is permitted through a combination of a "flexible" accelerator and technological change, and then these opportunities are exploited over a considerable period of time because of the limitations imposed by capacity ceilings in the capital goods industries. 10 But this approach

as with Kaldor and Kalecki, investment is made a function of the level of output and the size of the capital stock. But these models also are far too simple and mechanical and

suffer from most of the other weaknesses of the accelerator-type models.

The state of our knowledge of the causes and control of economic instability is still about as it was summarized in the report of the American Economic Association sub-committee published in 1950. Of that report, Arthur Smithies justly said: "So far as it depends on economic doctrine, it could have been written soon after the publication of the General Theory; and it could not have been written before." See his review of the report, reprinted in Readings in Fiscal Policy, p. 442.

20 Cf. R. M. Goodwin, "A Model of Cyclical Growth," in E. Lundberg, ed., op. cit., pp. 203-221. Mention should also be made of the more flexible approach permitted when, as with Kaldor and Kalecki, investment is made a function of the level of outcut and

is also overly mechanistic and everly aggregative; it neglects expectations, cost-price relations, monetary and financial factors, the possibility of different kinds of cycles (in part because not all types of investment are subject to the same influences); and so on.<sup>11</sup>

It seems to me that the main directions in which the theory of economic fluctuations needs to move are the following: the development of a more realistic and flexible theory of investment behavior that will reflect an improved understanding of both the short-run cumulative process and of the variety of technological, institutional, monetary, and other forces determining the pattern of growth; more attention to the factors in the cyclical self-generating process that the neo-Keynesian literature has tended to neglect, such as expectations, costprice relationships, problems of interindustry relationships, monetary and financial factors, and so on; and more study of the interrelationship between wages, prices, employment, and the behavior of aggregate demand under different sets of institutional conditions. Our aim should be a set of interrelated theories that, from a common body of assumptions and with due regard to the needs of policy, give us simultaneously reasonable explanations of the interrelated short- and longrun movements of output and employment, on the one hand, and of price and wage levels, on the other. This is, I suppose, an unattainable ideal, but it suggests the directions in which we need to move.

Our experience in the postwar period suggests that, among other things, we need to pay more attention to developing a useful theory of minor cyclical fluctuations. At present, a good many economists do not get beyond the phrase "inventory cycles" or "inventory adjustment" in explaining recessions of the sort we experienced in 1948-49 and 1953-54. In the main neo-Keynesian tradition we have only Metzler's theory to fall back on. Whatever the merits of the multiplieraccelerator type models such as Hicks's, one thing they tell us nothing at all about is the sort of minor recessions we have had in the postwar period—and which we had also before the war. What we need to do here is to refurbish the more old-fashioned type of analysis of the cumulative process (Ruth Mack has made an important start), combine it with a dynamic theory of effective demand, and show how and under what conditions this process can lead to a cumulative curtailment in output faster than in sales without at the same time necessarily bringing about a significant decline in long-term investment.12

While we have made relatively little progress since the war in de-

<sup>&</sup>lt;sup>11</sup> For an attempt to remedy some of these deficiencies, see R. A. Gordon, "Investment Behavior and Business Cycles," *Review of Economics and Statistics*, February, 1955, pp. 23-34.

<sup>&</sup>lt;sup>12</sup> I tried to suggest the outlines of such an approach in "Investment Behavior and Business Cycles," op. cit., p. 24.

veloping a useful general theory of economic fluctuations, partial studies at both the theoretical and empirical level have increased our knowledge of some aspects of the dynamic process. These include useful work on consumer behavior, including a growing recognition of the short-run instability of the consumption function, the development of survey data on investment plans, Abramovitz' and Metzler's work on inventory behavior, Ruth Mack's studies of the relations between consumer buying and the various stages of production, Moore's work on diffusion indices, some new insights in the area of monetary theory and policy, some exploratory work on the formation of expectations, and so on. We have had much debate and perhaps a little light on the interrelations of wages, prices, spending, and employment, but the critical questions in this field remain largely unanswered.

On what might be called the theory of stabilization policy, there have been surprisingly few important developments since the end of the war, by which time the theory of a stabilizing fiscal policy had been fairly well worked out. The two most important postwar developments have probably been in the area of monetary theory and policy and some empirical work on the effectiveness of the automatic stabilizers. But no essentially new stabilization techniques or important new ways of using the familiar ones have been developed in the last ten or fifteen years.<sup>13</sup>

Perhaps inconsistently, I am more favorably impressed by the potential usefulness of recent developments in the theory of growth than I am by the main lines of neo-Keynesian business cycle theory. although both have a common stem and essentially the same weaknesses. A virtue of the growth models is that they can be interpreted as making suggestions regarding longer run tendencies. (Because they do deal with the long run, we can also, as Fellner urges us to do, consider the possibilities of mutual adjustment among the parameters of these models.) Adequately elaborated, they may become useful tools which suggest some of the conditions that must be met if satisfactory growth rates are to be achieved, and they may help to throw light on the interrelations between long- and short-run movements. A promising development is the elaboration of the multiplier-accelerator type of model so that technological change (operating on autonomous investment and on the capital-output ratio) plays an important role in the determination of both the trend and cyclical fluctuations.14 While, in

<sup>&</sup>lt;sup>13</sup> Compare the similar reaction of Lorie Tarshis in his review of the Universities-National Bureau Committee volume, *Policies to Combat Depression*, in the *American Economic Review*, September, 1956, p. 705.

<sup>&</sup>lt;sup>14</sup> A pioneer in this sort of combination of the Keynesian and Schumpeterian approaches was Alvin Hansen. This synthesis is also explicit in Goodwin's work previously cited. For

a way, this does not help too much, it does emphasize the importance and potential instability of so-called "autonomous investment," points to the need for some disaggregation even at the expense of complicating the model, ties cycle and growth theory more closely together, and suggests some of the problems involved in maintaining a satisfactory rate of growth with different levels of saving and under different conditions of technological progress. This type of model needs to be elaborated further so as to deal with various types of investment, to take account of population growth, and to deal with other variables the secular movements of which are obviously important in the process of growth and in influencing shorter run movements of output, employment, and prices.

The most important empirical work on growth has clearly been done by Simon Kuznets. For our purposes we need mention only his important findings on the existence of a long cycle or intermediate wave of about twenty years' duration. Already this type of movement stands on a much firmer factual footing than was ever true of the Kondratieff wave of fifty to sixty years, and confirming evidence has been offered by Brinley Thomas, Abramovitz, and others. We have already had suggestive studies relating these intermediate secular movements to swings in population growth and migration, to cycles in residential building, and to technological change, Such studies are of obvious relevance in trying to assess the future pattern of growth and in evaluating the continuously evolving state of current and prospective investment opportunities, which, as I have suggested, are crucial in their influence, not only on the rate of growth, but also on the course of cyclical fluctuations. In this connection, it is worth repeating the following comments by Moses Abramovitz regarding these long swings:

... there is reason to expect that whenever our rate of progress begins to slow down markedly, forces will also be present making for serious depression. Such depressions will not necessarily be experienced in view of the role government may play in counteracting them. But certainly the wisdom and energy of the government will be put to a severe test. The experience with long swings suggests that our liability to severe depression may be a normal part of a swing in the rate of growth, which may itself be due, in part, to recurrent causes. If these could be identified and better understood, our ability to prepare for, and to meet, the emergency of depression would undoubtedly be enhanced.<sup>15</sup>

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This brings me to my final paragraph, which will serve also as a summary and conclusion. Our tools of business cycle analysis need to be reworked if they are to be more useful to the policy-maker than they have been so far. I have suggested some of the improvements that I think are necessary. They center around two main points: (1) reincorporating into business cycle theory more of the old-fashioned

another promising synthesis along these lines, see Daniel Hamberg, Economic Growth and Instability (New York, 1956).

15 In AEA Papers and Proceedings, May, 1956, p. 23.

analysis of the cumulative process to help both in explaining minor cycles and in assessing the degree of resistance of the economy to both upward and downward spirals and (2) development of a more adequate theory of investment behavior so that we can predict better than we now can under what conditions, if at all, a serious contraction might develop out of a substantial decline in private investment (and how such a decline might be quickly reversed). Progress on this second front calls for a close collaboration of the theorist and the empirical worker. Starting from the hypotheses suggested by current theory, we need intensive empirical work on postwar investment behavior, looking toward assessment of the effect of backlogs, technological change, population growth, the behavior of total income and its distribution, institutional changes, labor costs, and other forces on the course of private investment in the postwar decade—probably sector by sector.<sup>16</sup> Moderate success at this empirical level should help both to give us a more satisfactory theory of investment behavior and also to provide more adequate tools for both of the stages of analysis on which stabilization policy must be based.

<sup>16</sup> Some promising work along these lines is now being carried on by Bert G. Hickman at the Brookings Institution.

### LABOR'S CONTRIBUTION UNDER THE EMPLOYMENT ACT

By Peter Henle A.F.L.-C.I.O.

Credit for the growth and stability that have characterized the American economy during the decade since the signing of the Employment Act must be widely distributed. We have had better statistical data and a business community more alert to its responsibilities and more aware of the need for long-range planning. Government has played a more positive role in economic affairs and, of course, the tradeunion movement has been far more vigorous and more widely accepted than its counterpart thirty years ago. I would list four ways in which union activities have contributed to economic development during the postwar era.

1. Union Activities Have Strengthened the Consumption Base of the Economy. One basic aim of unions, of course, has been to obtain greater real income for their members. This has been reflected in a real continuing upward pressure which unions have exerted on the wage structure.

Economists seem to enjoy arguing whether unionism has actually brought union workers higher wages than they would otherwise have received. Although this is a subject on which unions have a good deal to say, at this point it is sufficient to comment only that in the practical world, those concerned with the problem of wage determination, particularly employers, spend their time talking and acting as though unions are effective in raising wages for their members.

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The pressure for higher wages has strengthened the income and purchasing power aspect of our economy. While employers naturally are most concerned about wages as costs, they have neglected the fact that higher wages have made possible a broadened demand for all types of consumer goods. Moreover, negotiation of union demands for paid vacations and holidays has directly stimulated the markets for leisuretime products.

Although union action by no means has been solely responsible for the record of the postwar period, union wage pressure has contributed to a steadily rising, rather more widely distributed income, which in turn has meant a broader and most stable market for the products of American industry.

2. Union Activities Have Contributed Towards Stabilizing the Flow

of Income. Unions have been interested, not merely in the level of wages, but in all the different aspects of family income. They have been particularly concerned that sufficient income is available to enable American families to meet the hardships of unemployment, old age, illness, and disability.

To achieve this end, unions have been active in both the private and public sectors of our economy. Where possible, unions have worked to achieve the administrative economies and broader coverage that become possible only through federal or state legislation.

However, where efforts to obtain remedial action through legislation have proved unavailing or inadequate, unions have not hesitated to work through collective bargaining to obtain the same goals for their own members. Thus collectively bargained pension plans supplement the federal old age survivors' insurance program, and in the absence of a national health insurance program to aid in meeting the burden of medical costs, unions have worked out with employers health and welfare plans to meet at least part of this need.

The most recent example of this, of course, is the program for supplementary unemployment benefits that has now been adopted in a number of different industries. Many outsiders have been very skeptical of the value of this program and its economic effects. Yet, judging by the preliminary results of the program, it seems clear that employers and workers have worked out an arrangement at modest cost and with a conservative financial structure that provides a certain minimum supplementary allowance to unemployed workers, in addition to the payments received through the state unemployment compensation system. Since very few, if any, states now meet the standards urged by the Secretary of Labor for unemployment compensation, it is easy to understand why unions have had to resort to their strength at the bargaining table to approach an aedquate unemployment compensation program.

The impact of this program at the present time may be quite minimal but I suspect its long-time effect will be far more important than many economists realize. It is particularly important because it maintains income for individuals at just the time (at periods of unemployment) when it is most needed.

The activities of unions in this area have produced a series of fringe benefits that must be counted among the most valuable of the stabilizers that help prevent a minor recession from snowballing into a major depression.

3. Union Actions Have Served to Prod the Corporate Managers into Making Important Improvements in Productivity. The character

of the American economy has altered considerably over the past few decades. One of the changes, it seems to me, has been a shift in the traditional motivating forces for economic improvement. Certainly, the assumption of risk for profit by an individual entrepreneur is quite different from the risks undertaken by a modern corporation with its vast numbers of stockholders and its decision-making powers in the hands of salaried managers. The character of competition has also changed as the American economy has become dominated more and more by larger firms with administrative pricing power.

Under these circumstances, those in charge of corporate affairs may be inclined to fall into the easy position of accepting a well-established profit without taking additional steps to improve the firm's competitive position. One factor in today's economy that helps to prevent the spirit for innovation from disappearing is the trade-union. By its upward pressure on wages, the union adds an important force for change on what might otherwise be a complacent management. Management is brought face to face with the necessity to improve productivity so that labor costs can be kept at a minimum. This has been a healthy influence during this postwar period.

However, a number of economists and public officials have expressed some concern regarding this aspect of unions' activities in the future. They seem particularly concerned that unions will demand and employers will grant wage increases above and beyond the rate at which the productivity of the economy is increasing.

This is obviously a very complicated issue hardly fit for discussion in so brief a period. Let me make only two points:

- a) Union power is not all that the economic alarmists have made it out to be. By and large, those who have had the opportunity to look most closely at collective bargaining have concluded that this is a realistic method of wage determination; that the trend in bargaining has been towards a greater sense of responsibility to the public; and that this nongovernmental method of settling wage disputes is far preferable to any system that would impose governmental controls.
- b) The economy's record regarding this wage-price-productivity relation during the postwar period is good. From 1946 to 1955, the average annual rate of increase in the real straighttime earnings of factory workers was 2.6 per cent—certainly within the range of productivity increases, even if allowance is made for improved fringe benefits. While the price level rose during this period, the two chief inflationary periods, 1946-48 and 1950-51, appear to have been triggered by the action of consumers and businessmen bidding against each other for limited quantities of goods. There is little to indicate

that collective bargaining or wage agreements were responsible for the price increases of these periods.

Since 1951, the price level has been remarkably steady, although the government's indices have recently started to climb. However, a comparison with the experience of other countries would show that the United States, where union wage pressure has been the most highly developed, has suffered as little as any nation from the postwar inflation.

Indeed, the potential dangers of an economy in which there are inadequate wage pressures, in which wages fail to keep pace with productivity (as in the twenties) should be at least as equally disturbing as the possible threat of so-called "excessive" union wage pressures. It would be heartening if those industries in which wages still fall short of the economy's productivity gains would receive as much attention as the occasional industry in which real wage advances may surpass the economy's productivity increases.

4. Union Activities Have Served as a Reminder That Economic Policy, Including the Employment Act of 1946, Must Function to Meet Social as Well as Economic Objectives. While it is true that the economist must not allow his value judgments on social or political issues to obscure his economic analysis, we must all bear in mind the fact that there are grave shortcomings in our economy if it is not operating toward certain commonly accepted social goals.

The Employment Act of 1946 is a social as well as an economic document. The defects in the Act as written for the economist, its vagueness and somewhat conflicting objectives, which Dr. Nourse has ably pointed out, high light the fact that the Act is as much a statement of social goals as it is a prescription for economic policy.

The gantlet of political scrutiny to which this particular piece of legislation was subject produced a number of changes in language; for example, no longer can the Act be called a "full employment" law. However, the emphasis in the Act is still on employment, on furnishing jobs to the nation's work force; the law is neither the "production act of 1946" nor the "purchasing power act of 1946."

The point is that, although the language is conveniently vague, the intent is to make clear that the primary test by which our economy is to be judged is whether it provides "useful employment opportunities including self-employment for those able, willing and seeking to work."

It is the trade-union movement which in many cases has taken the leadership in focusing attention on what might be called the social aspects of economic issues. One example comes readily to mind. While union leaders are quite willing to agree that the nation has been ex-

periencing a continuing high level of employment, they will also call attention to the pockets of serious distress that still prevail, for example, in many textile and coal communities. These areas need attention, unions argue, even though by economists' standards, the level of employment for the nation as a whole meets requirements of the Employment Act of 1946.

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By and large, the union attitudes on economic issues have served to remind economists and public officials that the American economy is not supposed just to keep going but to keep going in a forward direction

# BUSINESS INVESTMENT FOR STABILITY AND GROWTH

By George W. Terborgh
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Business investment in new plant and equipment—historically a "bad actor" among economic series—must always be a matter of major concern to any agency responsible for implementing the Employment Act of 1946. Certainly the Council of Economic Advisers has found it so. It is interesting to inquire, therefore, whether the decade since 1946 has seen any progress toward the objectives of the Act in this area of the economy. I believe there has been such progress, owing in part to an improvement in managerial practice and in part to the development of new statistical indicators. Let me discuss these points in order.

Improved Management Practice. So much has been said lately about the postwar revolution in management practice in this area that no extended comment is required. Long-range planning of capital expenditure programs and systematic capital budgeting, formerly confined in the main to large companies (and by no means universal among them), have now become the order of the day among medium-sized and even small concerns. Not only are capital programs in general more carefully prepared; there is better planning of their financing and closer control of their execution. Add to this a gradual improvement of the techniques of investment analysis, and we have a picture of solid progress.

The question of interest here, of course, is how far this improvement of management practice contributes to the objectives of the Employment Act. Specifically, how far does it contribute to stabilizing business fixed-asset expenditures? Or, to state the question somewhat more narrowly, to what extent does it make these expenditures resistant to economic declines?

The answer to these questions no one can give with assurance. The postwar era has as yet provided no real test. I have no doubt that the effect of the managerial revolution in this area is constructive, that it does conduce to greater stability of business capital expenditures, and that it does give these expenditures greater resistance to economic adversity; but it is most unlikely that it affords anything like the degree of benefit imputed to it in certain quarters. Some profess to believe that management nowadays has its gaze so firmly fixed on far horizons that it is oblivious of the undulations of the intervening terrain;

hence that business capital expenditures have become one of the stable economic series, depression-resistant if not, indeed, depression-proof. This, in my opinion, is sheer romancing. Certainly until this rosy vision is confirmed by experience in a period of severe economic adversity, the Council of Economic Advisers will do well to take a more sober and realistic view of the matter. The recent improvement of capital planning and budgeting practice is all to the good, but it does not herald the millennium.

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New Statistical Indicators. I turn now to the second line of progress mentioned at the outset: the improvement of the current statistical indicators of business investment activity.

The past decade has seen not only a significant improvement of such well-established series as the Department of Commerce survey of orders, shipments and backlogs of machinery manufacturers, the Commerce-SEC and McGraw-Hill compilations of capital-expenditure plans, and the *Fortune* survey of sales forecasts by equipment producers; it has seen also the development of some new series of considerable promise. I refer to the McGraw-Hill monthly series of new orders for capital equipment, the McGraw-Hill quarterly compilation of new-orders forecasts by equipment producers, and the NICB-Newsweek quarterly compilation of capital-expenditure authorizations (appropriations) by manufacturing companies.

The two series last named, which are of very recent origin, represent an interesting attempt to tap the planning-decision-commitment-expenditure sequence at the earliest possible point. They are "lead" series. Obviously, quarterly forecasts of bookings by equipment producers should lead by a considerable margin retrospective tabulations of orders actually received. Obviously, also, quarterly compilations of capital-expenditure authorizations should show a significant lead over series reflecting the commitments resulting from the authorizations, and of course a much longer lead over series reflecting the resultant expenditures. (For a discussion of lead series in this field, including the two just mentioned, see the Report of the Consultant Committee on Business Plant and Equipment Expenditure Expectations, July, 1955. The Committee was organized by the Federal Reserve Board at the request of the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report.)

The importance of lead series in this field needs special emphasis. It appears that the average time elapsing between the authorization or appropriation for business capital projects and the actual expenditure of the funds appropriated is close to a year. This means that forecasts of expenditures over the near term reflect almost entirely the results of decisions already made. They constitute an aftermath series,

and as such are of limited usefulness for economic policy. What is needed is a measure of the flow of current decisions, not a measure of the current effects of past decisions. Policy based on aftermath series is almost certain to be delayed and may be dangerously ill-timed.

While the new lead series just mentioned promise to be useful in the application of the Employment Act, further experimentation along the same line is certainly in order. It is to be hoped that the Council of Economic Advisers will lend its influence toward that end.

Basic Measures. Useful though good lead series may be as an indication of current trends in business investment, they need to be supplemented by basic studies of what may be called the "technical position" of various capital goods stocks—their size, their capacity, their utilization, their age composition, their obsolescence, etc. For without such basic studies, it is difficult to appraise any given level of capital formation or to judge the likelihood of its continuance.

Consider, for example, the controversy over the present level of business investment. Is it supported by currently accruing requirements, hence normal, or is it borrowing from past or future? What rate of expenditure is sustainable? Such questions find no satisfactory answer at present. While I do not imply that they could be answered with complete assurance even if we knew the size, condition, and utilization of capital stocks, this knowledge would help enormously. Here, also, the Council of Economic Advisers might well lend its influence.

### CREDIT POLICIES AND ECONOMIC STABILITY

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# By E. SHERMAN ADAMS American Bankers Association

Since the passage of the Employment Act ten years ago, there have been significant developments in the area of private and public credit policies that have important implications for economic stability. I should like to comment briefly on certain of these developments and to point out some of the problems they have created that deserve your study.

With respect to private credit policies, it is notable that the lending and investment policies of commercial banks have remained predominantly conservative throughout the past ten years of unprecedented boom. There are some elements of instability in bank credit today, of course, but from the standpoint of credit risk, bank assets are far stronger than they were, say, in 1920 or 1929.

This conservatism in banking has been a stabilizing influence in our economy over the past decade—in contrast, for instance, with the twenties. Similarly, the improved quality of bank assets should help to prevent undue liquidation of bank credit when business turns downward. In short, bank credit policies should have a more stabilizing—or less destabilizing—influence upon our economy in the future than in the past.

However, while banking has changed its spots, substandard borrowers have been able to turn to nonbank lenders. Moreover, nonbank credit agencies, public and private, have been growing much like Topsy but much faster. We have been following a policy of curbing the growth of bank credit while at the same time actively stimulating the expansion of nonbank credit.

There are important implications here for monetary management. Experience has demonstrated that the credit policies of nonbank intermediaries at times respond only very slowly, if at all, to the influence of Federal Reserve policy. To be sure, nonbank lenders do not create money but they do activate money and sometimes channel it into areas where its impact is highly inflationary—as, for example, the construction industry.

Can traditional methods of credit control adequately cope with this situation? Or do these developments call for a new approach to the problem of credit management?

In academic circles there is lively discussion about reorienting cen-

tral banking in the direction of supervising nonbank as well as bank credit. The trend is away from the preoccupation with money supply and other monetary aggregates that we still find in many textbooks. Attention is also being given to possible new techniques and institutional arrangements for credit regulation.

In the area of real estate credit, a difficult problem is posed by the government's policy of stimulating housing at all times. The credit policies of government agencies concerned with residential mortgages have frequently run counter to Federal Reserve credit policy. There is clearly need for better co-ordination of the credit policies of these agencies with Federal Reserve policy.

Could adequate integration be achieved if Congress were simply to instruct these agencies to follow policies consistent with Federal Reserve policy? Or should some arrangement be worked out whereby the Reserve authorities could exert greater influence on the policies of government agencies in the mortgage field—and perhaps in some other credit fields as well?

These questions raise the broader problem as to what the role of the Federal Reserve System should be in our present-day political economy. Are the present objectives and the independent status of the Federal Reserve fully compatible with the philosophy of the Employment Act?

The Reserve authorities have told the Joint Economic Committee that they see no conflict between their aims and those embodied in the Employment Act—since they interpret the Act as implying endorsement of their objectives, in spite of its faulty wording. They obviously believe, moreover, that the Reserve System can make its maximum contribution to these objectives only if its present independent status is preserved.

However, Federal Reserve policy in recent years has been predicated on the major premise that price-level stability is not only consistent with maintaining high levels of production and employment but is essential for achieving this goal. This proposition is not universally accepted outside the Reserve System. At times the Council of Economic Advisers and many others have been noticeably less concerned with price stability than have the Federal Reserve authorities. Moreover, the Council has at times shown a disposition to intrude into the area of Federal Reserve policy making.

This situation may be fraught with danger. It could lead to serious conflicts in public economic policies and conceivably to an impairment of the independent status of the Reserve System. If the Federal Reserve's premise is valid, or is at least desirable as a working hypothesis,

then should not the Employment Act be amended to give due weight to the importance of price stability as a guide for other public policy-makers?

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Opinions differ as to how much reliance we can place upon the Federal Reserve System with its existing powers in trying to achieve economic stability. Since the Federal Reserve-Treasury accord of 1951, our economy has grown rapidly and, until recently, with over-all price stability. To what extent has the Federal Reserve actually contributed to this good performance?

Most informed observers would probably agree that during this period Federal Reserve credit policy has been skillfully conducted and has made some contribution to economic stability. On the other hand, it can hardly be contended that the influence of the Fed's actions has always permeated the credit picture. In some strategic credit markets, the lags have been very considerable—as, for example, in consumer credit in 1955. Even in banking, where the impact is most direct, the actual effect upon the total volume of bank lending may have been considerably less than is frequently assumed.

To be sure, Federal Reserve policy has succeeded in restricting the growth of the money supply. But just how significant is this? Even from the standpoint of quantity theory, the curb on money supply has been partially nullified by a substantial rise in money velocity. Indeed, credit restraint accompanied by higher interest rates has clearly stimulated the activation of idle balances and a more intensive utilization of money.

Moreover, throughout this period rising interest rates have not discouraged demands for credit as effectively as some textbooks suggest. In the case of business borrowers, high tax rates make borrowing cheap at any price. In the case of consumer credit—now more important than formerly—borrowers neither know nor care what rates they pay.

Finally, the over-all price stability of 1951-55 was to some extent deceptive. Throughout this period the wage-cost-price spiral continued to operate, though its effects were masked by declining farm prices. In fact, over these years we have been in process of institutionalizing our inflationary habit of raising wages faster than gains in over-all productivity. Over the past year, despite the Federal Reserve's efforts, prices have again been rising.

It is hard to say precisely what all these factors add up to in terms of the effectiveness of Federal Reserve policy. They certainly underscore the fact that credit policy alone cannot assure economic stability. They also suggest, it seems to me, that we need to know more than

we do as to how, under present-day conditions, the Fed's actions actually affect the credit policies of various financial intermediaries and the saving and spending of various groups.

A critical test of Federal Reserve policy may now be in the making. If the current boom continues and if the Federal Reserve adheres to its present course, strong demands for credit could cause the availability of bank credit to become much tighter than it is at present.

Should the Federal Reserve permit such a situation to develop or would it be too dangerous from an economic standpoint? On the other hand, if the Fed were to relax its reins on the money supply in order to avoid a credit squeeze, would this not be tantamount to validating the wage-cost-price spiral and inviting further inflation?

Clearly we are today confronted with many unanswered questions with respect to credit policies. If we are to achieve the objectives of the Employment Act, there is urgent need really to face up to these problems and to formulate workable solutions to them.

#### TAX POLICY FOR STABILITY AND GROWTH

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By ORRIS C. HERFINDAHL Resources for the Future, Inc.

Over the first decade under the Employment Act there has developed a substantial but limited consensus on tax policy for stability. As is well known, passage of the Employment Act did not signify the reaching of this consensus, for the Act's statement of objectives and its suggestions on means are marked by some vagueness and confusion. Nevertheless, the instrumentalities and procedures that came out of this uncertain beginning have been useful in developing agreement on some aspects of tax policy for stability. The evidence of agreement is to be detected not so much from the statements of the various groups, both private and governmental, that are concerned with tax policy as from the similar advice that is given when seemingly different policies are applied to particular situations.

This consensus in application, if not in statement, can be put in two parts: (1) when the economy is moving along with a tolerable amount of unemployment and a stable price level, set tax rates to balance or perhaps somewhat overbalance the budget; and (2) if prices rise somewhat or economic activity falls moderately, do not change tax rates to eliminate the surplus or deficit that arises; rather, let them play their part in slowing undesired movements in the money volume of economic activity.

Development of this consensus over the period since 1946 can be viewed as the product of reconciliation among three types of over-all tax policies:

- 1. A policy that strongly emphasizes annual or near annual balance or overbalance of the budget in setting tax rates. In simple versions of this policy, balance is an end in itself, but in more reasoned forms the emphasis on balance is the consequence of a judgment that decisions on government expenditure will be improved if made under the powerful restraint provided by adherence to a rule of balance.
- 2. A policy under which tax rates would be set according to a comparatively simple predetermined rule involving the price level and the level of economic activity. The main argument for reliance on a simple rule of this type is that it will make it easier to avoid serious mistakes in diagnosis and prescription that may accentuate instability, while still permitting the tax system to make a substantial contribution to economic stability. Without the restraint provided by a simple rule,

the stimulating effect of a tax rate reduction, for example, may begin to unfold just at the time when a contractive force is needed.

3. A policy that relies heavily on the current exercise of discretion or judgment in setting tax rates. According to this policy, diagnosis of the particular situation would be followed by an attempt to set tax rates so they, together with other instruments of stabilization policy, will bring a satisfactory level of economic activity.

Reconciliation among these views has come through modification in both statement and application. Annual budget balancers have modified their insistence on balance every year and recognize that a deficit might be useful in some circumstances. But note that their concern about unwise government expenditure gets strong recognition in the consensus, for balancing the budget during good times means that additional expenditure will require higher tax rates than otherwise would be necessary. On the other hand, many of those who are comparatively confident of our diagnostic and prescriptive abilities would support a requirement of budget balance when times are good. There are few who would argue that tax policy should be concerned only with changes in tax collections rather than both changes and level.

The reconciliation that has taken place between the rule group and the discretion group perhaps is clearer in the application of policy to concrete situations than it is in statement. The similarity of advice is a result, on the one hand, of reluctance of rule adherents to apply a simple rule in a thoroughgoing fashion, although the predominant element in their advice will still be the rule. On the other hand, those who are reluctant to tie tax policy to any simple rule recognize the serious limitations on our diagnostic and forecasting abilities. The result is a hesitancy to advise substantial changes in tax rates until the actual situation clearly calls for a change. Hence if a discretionary policy is combined with some concern for the level of taxes—for example, budget balance—the results are not unfairly described by the consensus outlined above.

Development of the limited agreement on over-all tax policy has been facilitated by changes in the size of the budget, the system of transfer payments, and in monetary policy. Enlargement of the system of transfers and of the portion of national output devoted to federal outlays has increased the automatic response of revenues and transfer payments to changes in the level of economic activity. This has led to a higher assessment of the effectiveness of a policy that is cautious in changing tax rates.

Even more important to the consensus was the shift to an active monetary policy from a policy whose main guide appeared to be the preservation of the level and structure of interest rates. The tax policy outlined here limits the scope for changes in tax rates and revenues. Given this limitation, tax and monetary policy can give promise of adding up to reasonably good control of fluctuations only if money policy also serves to stimulate and retard. This requires fluctuations in interest rates, although we apparently are not yet agreed on the behavior of the quantity of money appropriate to produce the desired results. The new relation between tax and money policy may be summed up by saying that tax policy, instead of having to serve as the major anticyclical weapon, is now viewed as one of the two major weapons.

There are several minor loose ends to the agreement on tax policy that are sufficient to give the appearance of differences in specific applications of policy. Among these loose ends, which can only be mentioned here, are the following: To what budget should the policy be applied, the administrative, the cash, or some other budget? In good times should the budget be balanced or overbalanced? That is, should a prospective surplus of revenue over expenditure be allowed to increase the Treasury's cash balance or should it be used to reduce debt or tax rates? Should additional nonemergency expenditure during periods of deficit (i.e., during periods of lower economic activity) require an increase in tax rates or not?

The major limitation on the tax policy consensus is its restriction to comparatively stable prosperity and moderate departures therefrom. Although there seems to be a loose agreement that tax rates should be changed in response to clear evidence of major movement in the price level or decline in economic activity, the nature of tax policy for severe contractions is still not very clear.

Effort to develop and elaborate tax policy for major contraction and rapid price rise would be well repaid, for even limited success could be important in reducing delay in taking action should the need arise. Furthermore, the task of keeping fluctuations within a tolerable range by preventing serious cumulation of movement will be easier if it is clear that policy in the face of major movements will not have to be improvised.

Among the problems that need consideration are the following: How do we recognize a situation in which tax rates should be changed to enlarge the surplus or deficit that the economic fluctuation has already produced? How bad do things have to be? What tax rates should be cut or increased?

Consideration of changes in tax rates quickly comes to involve fundamental questions of progression and other aspects of equity. While anticyclical alteration of the degree of progression in the tax system no longer enjoys much support, the kind of rate reduction that would be reasonably consistent with ideas of proper progression is not at all clear. This is partly a result of difficulty in describing the progression in the tax system because of its complexity. Advance consideration of the kind and amount of tax reduction may, therefore, substantially reduce the time required to find an acceptable pattern of rate reduction.

We also need consideration—especially at the Congressional level—of the various possibilities for cutting the time required for deciding to change tax rates and for actually putting the change into effect. The possibilities along this line, which involve a more or less restricted grant of power to the executive or at least an advance declaration of policy of some sort, require prior consideration of the pattern of rate reduction.

One of the major gaps in policy for severe contraction involves transfer payments, which may be viewed as negative taxes. At some point in a severe contraction that persists it would probably be necessary for the federal government to assume the main burden of financing a considerably expanded system of transfers. Although it may be unwise and perhaps impossible to work out detailed solutions before the event, much ill-advised action and lost motion could be avoided by advance public consideration of the problems involved. These include the possibility of emergency expansion of unemployment benefits by lengthening their duration and increasing their size, consideration of other methods of expanding the system of transfers, and the finance arrangements.

While we have made headway in formulating over-all tax policy that will promote stability, progress in the adaptation of tax policy to promote economic growth is less clear. Perhaps the main contribution that tax policy can make to economic growth is through its part in holding economic fluctuations to moderate levels, but beyond this the relations between tax policy and growth become clouded with uncertainty. The truth is that we have very little systematic and tested understanding of the conditions necessary for innovation and other elements of economic growth or of the relations of taxes to growth. And the complexity of the concept of growth adds to the difficulty of forming judgments on the costs and desirability of increasing the rate of growth.

Given an over-all tax policy for stability of the type that has been sketched here, the range of tax structures compatible with satisfactory economic growth is probably rather wide. This is a reflection of the great importance to economic growth of factors other than tax structure, whereas tax policy with respect to total revenues is of key importance to stability.

But even though there may be a number of tax structures compatible with growth, there are also many that would be inimical to growth. If a tax structure is not to fall in this group, I think we can specify two general qualities that it should have: first, that taxpayers should regard it as fair and, second, that tax considerations should not dominate economic decisions by reason of the complexity or distorting effects of the tax structure. The danger is that changes in tax structure made in the name of equity will so increase the complexity of tax law that there will be progress toward neither objective.

Pressures to modify the tax structure and to eliminate what are claimed to be inequities are always strong. In recent years the pressures have increased because the defects of the tax structure have been emphasized by the very increase in rates and revenues that improved the automatic flexibility of the tax system. The complaints are of the two general types, of course. Some are dissatisfied with the amount of progression in the system. Some will complain that they are being treated unfairly because another group, in essentially similar economic circumstances, is obtaining a special privilege.

There are two ways to respond to these complaints. One way is to redress each case of real or fancied unfairness by extending a special privilege or granting a new one. Then, following a well-established pattern, a third group will discover that its situation is, after all, very much the same as that of the group that just received the special privilege. Thus the complexity of tax law continues to grow and the disparity between the nominal rate schedule and actually effective tax rates is increased.

The other way to correct inequities in the tax structure is to eliminate the exceptions and special privileges that are the cause of the complaint or to modify provisions of the law so as to get general rather than special solutions for justified complaints. The complexity of the tax structure would thereby be diminished and taxes would come to play a less important role in economic decisions. There is a strong presumption, I believe, that the effects on the quality and rate of economic growth would be favorable.

That we could move to a greatly improved tax structure in one jump is most unlikely, but if small changes are to add up to a better tax structure, there must be a sense of direction. This sense of direction, against which all proposals for modification of the structure should be measured, can be achieved only if we entertain at least vaguely similar views on the general outlines of a tax structure toward which we should be moving. To this end, we need wide participation in discussion of the larger issues of tax structure such as the treatment of capital gains, the problem of defining income over time, relations

between death taxes and personal and corporate income taxes, the relative amounts of revenue to be raised from the various taxes, and the amount and distribution of progression. These questions were left largely untouched by the revision of the Internal Revenue Code in 1954.

Work on the two important problem areas suggested here—tax policy for major fluctuations and the general outlines of the tax structure toward which we should be moving—can be stimulated and facilitated by the agencies set up under the Employment Act. They must, of course, take into account the interest and responsibilities of other Congressional committees and other parts of the executive branch in tax policy. In so doing, the Council and the Joint Economic Committee can make a valuable contribution by continuing to serve as instruments of education and conciliation.

## BUSINESS FLUCTUATIONS AND INFLATION

#### IS INFLATION AVOIDABLE?

By Roy L. Reierson
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Once again—and for the third time since the end of World War II—the American economy is experiencing a wave of rising commodity prices and higher living costs. The pace and the extent of the advance has been more moderate than the price and cost inflation which occurred in the immediate postwar years and again at the time of the Korean war. Nevertheless, the present upsurge raises more troublesome questions and has more disquieting implications than was the case earlier.

#### A Cause for Concern

Perhaps the most disturbing feature of the current situation is that, for the first time since the thirties, the economy has been subjected to broad advances in prices and production costs which cannot be attributed to war, preparation for war, or the aftermath of war. Our economy entered the immediate postwar period with huge pent-up demands for capital equipment and consumer goods pressing upon a limited supply. Moreover, purchasing power had been boosted, not only as a result of World War II financing practices, which led to tremendous public holdings of liquid assets, but also as a result of wartime economic controls, which permitted wages to advance much faster than prices. Thus, once controls were removed, the adjustment of prices to higher costs and spending power which took place in 1946-48 was unavoidable. In 1950, with the outbreak of war in Korea, prices again advanced smartly as military operations and the prospect of extensive rearmament contributed to forward buying by business and consumers both at home and abroad.

Once the impact of war-created needs had been absorbed and the backlogs of demands had been whittled down, it seemed not altogether unreasonable to hope that the economy might enter a period of general price stability. This hope received additional nourishment in the early fifties, when commodity prices receded from their peaks reached after the start of the Korean war and thereupon stayed on a fairly even keel which was not disturbed even during the 1952-53 business boom. In retrospect, however, this stability proved to be no

portent for the future, but was apparently the consequence of special circumstances, including the continuing downdrift of some commodity prices from the speculative peaks attained early in the Korean war, the weakness in agricultural prices, and perhaps also some uncertainty regarding the immediate economic future.

More recent developments have demolished the notion that inflationary pressures are mainly the consequences of rearmament and war. The present price rise began in 1955, at a time when world tensions had relaxed and prospects for peace appeared the brightest in many years. Military spending had been cut back sharply and the Treasury budget was shifting in the direction of a cash surplus. Furthermore, aggregate output of civilian goods in 1955 and 1956 was greater than ever before and the relatively easy credit conditions of the forties and early fifties had been succeeded by a policy of credit restraint.

The present price and cost inflation is not only conspicuously different from its earlier postwar predecessors, but differs also from the price upturns which have in the prewar past been associated with cyclical expansion in business activity, such as in 1924-26 and 1936-37. The current advance has already persisted for a longer time and has been of greater magnitude than in these previous periods of prosperity. Moreover, the end is not yet in sight. On the contrary, and significantly, the current advance in the general price level gained momentum even when prices of farm products were still declining; with the improvement in agricultural prices since the end of 1955, the wholesale price index, as well as living costs, has received a further boost. The greater strength in agricultural prices thus does not augur well for future price stability in the aggregate, since regardless of whether or not farm products continue advancing, it would in any event be unrealistic to look to a further sustained drop in agricultural prices, such as occurred from 1951 through 1955, as an offset to rising prices for industrial commodities. Higher food prices could admittedly absorb some of the consumer expenditures now being made for industrial goods, and thus might eventually restrain some of the price increases in the industrial sector of the economy. A more immediate effect, however, is likely to be further upward pressure upon the cost of living, which in turn will lead to additional wage demands and to automatic wage increases, rising incomes, and further strength for the cost- and price-raising forces in our economy.

## Underlying Inflationary Forces

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Valid grounds thus exist for suspecting that the current wave of price rises represents a form of inflation relatively new to the econ-

omist's dictionary. It assuredly represents not the classical case of inflation due to unrestrained issuance of currency or expansion of the money supply; neither is it the kind of inflation which accompanies or follows war. Rather, it appears to be the result of a novel combination of interlocked forces, which have on balance imparted an upward bias to the trend of production costs and commodity prices. These forces reflect political and social as well as economic motivations. Of the many forces involved, the major ones may be catalogued and discussed separately.

Doctrine of Dynamic Growth. One of the most pervasive of these forces is the conviction that the American economy is in a dynamically expanding trend, with the implied corollary of rapid growth in all major forms of business activity. A similar conviction has assuredly prevailed also in former periods of economic boom, but it is doubtful whether it has ever become so deeply rooted and so widely spread. Frequently coupled with this doctrine is the notion that institutional and structural changes in our economy have been such as to cushion any downturns in the business cycle—a notion which has apparently impressed itself quite strongly upon the business community as a result of the moderate character of the 1948-49 and 1953-54 recessions. Thus, it now seems generally accepted that economic depressions, if any, are likely to be milder in the future than before World War II and that any interruptions in long-term economic growth may be expected to be brief.

An important consequence of this conviction is the broad support it provides to business spending on plant and equipment, since it logically appears wiser, sounder, and more advantageous to have excess plant than to be caught short of capacity. In addition, the spirit of dynamic growth encourages and even compels competitive acceleration of capital outlays, since companies that see their competitors undertaking ambitious plant expansion programs must do likewise or face the prospect of losing their share of a growing market.

Investment Boom. The enthusiastic adherence to the growth concept has thus contributed importantly to the tremendous investment boom on which the American economy is currently embarked. Private investment activity is today absorbing a somewhat larger share of the national output than even in the boom year 1929, and a strong upsurge is under way also in the public investment sector. Huge investment outlays are reflected in current shortages in some basic materials, in sharp price increases especially for capital equipment and metal products, and in high operating rates in heavy industry. In addition, they have contributed greatly to shortages of skilled labor and to successively higher wages and salaries.

The investment boom, although potent, is not, however, by itself a compelling reason for constantly rising prices. Active investment, although it adds to demands for goods and services, does not inevitably result in higher commodity prices. A striking illustration was furnished in the twenties, when capital spending continued large and business activity climbed rapidly but when commodity prices tended quite steadily downward. This experience suggests that the economy is now feeling the effects of additional price stimulants, which were either absent or less powerful some three decades ago.

Higher Labor Costs. Another important impetus to inflationary pricing and spending is provided by the rapid increase in unit labor costs. Measurement in this area of the economy is not altogether simple but there is little doubt that wage rates in the postwar era have advanced considerably faster than output per man-hour, and that rising production costs have been a major consideration in business pricing policies. Some economists contend that the wage-cost-price spiral need not be self-perpetuating, but it has certainly demonstrated renewed vigor in the past year or two. Moreover, there is every prospect that unit labor costs will continue to push upward. Many wage contracts signed in 1955 and 1956 provide for automatic increases in 1957 and, in some instances, beyond. In addition, important labor unions have already announced that wage demands now being readied for 1958 will be larger than ever before.

The wage-cost-price spiral derives much of its strength from the notion, which has gained wide currency of late, that productivity in the American economy is advancing at an annual rate of about 3 per cent, so that wage increases of this magnitude can be absorbed without marking up costs and prices. This assumption is open to serious qualifications, among the most important of which is the fact that much of the long-term gain in productivity for the nation as a whole has been achieved by the shift of labor and capital from less productive into more productive uses. Thus, if industries where productivity is increasing less than the average are required to raise wages to keep pace with the national trend, they cannot recoup their higher costs except through advancing their prices. Also, contrary to the notion of a steady annual gain, productivity actually seems to advance in irregular waves, with some years, such as 1956, showing little or no rise. Pressures for higher wage rates, however, are continuous and persist even in years when productivity is relatively stable. Higher prices thus tend to be built into our economic structure, the more so as prospects for price relief in years of rising productivity are usually frustrated by a further rapid rise in labor costs.

In addition, bench marks for wage increases are often inflated be-

cause of the strategic role of key industries in labor negotiations key industries being here defined as those in which employment is large, the market outlook is favorable, and output per man-hour is increasing over the years, perhaps at an above-average pace. In such industries, labor enjoys a particularly advantageous bargaining position. Yet settlements in key companies or industries have a tendency to set a pattern for wage demands elsewhere, including industries where productivity is rising more slowly, if at all. A consequence of this competitive negotiation of labor contracts, particularly in a tight labor market, is that increases in wage rates and fringe benefits spread to employment sectors where output per man-hour is not improving significantly, with higher production costs and rising prices as the inevitable result. And, finally, even if wage increases could be held down to the pace of productivity gains, the consequences would probably still be to boost costs and prices, since this would leave no compensation for the use of capital equipment, which is in large measure the source of higher productivity and output.

In sum, it is surely evident that the patterns and practices which have evolved in wage negotiations over the postwar years have contributed materially to rising unit labor costs and higher selling prices throughout American industry. There are no indications that this source of upward pressure upon the price system will evaporate in the predictable future.

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The Impatience Factor. The strong advance in labor costs is a manifestation of what seems to be a broad national phenomenon; namely, a widespread impatience with the present standard of life. This impatience, manifest not only among consumers but also among business managements and public authorities, is reflected in the strong urge to expand particularly the stock of durable goods at forced draft, even at the cost of heavy borrowing. Consumers have demonstrated their readiness to incur large indebtedness, in the form of home mortgages and installment loans, in order to enjoy today the fruits of their expected future earnings—a trend which has been facilitated by prolonged prosperity, redistribution of incomes, high employment, the increased security provided by unemployment benefits and pension plans, and the prevailing strong confidence in the future. Business management, similarly, is becoming increasingly inclined to set its sights a number of years ahead—sometimes even a decade or more and to lay its expansion plans accordingly. Governments, likewise, are being pressed by popular demands for more and better services and facilities; standards of comfort are advancing and with them costs.

This nationwide eagerness for the good things in life and the insistence on enjoying them in the present of necessity entails the large

use of credit and has contributed much to the inflationary developments of the postwar decade. With demands for funds exceeding the supply of current savings, the commercial banking system is called upon to make up the deficiency, and unless the central bank follows a determined policy of credit restraint, the result is a continuing rapid increase in spending and in the money supply. In a period when business is already active and expanding, these conditions simply add to the already strong demands for consumer durable goods and capital equipment, accentuate shortages, increase labor scarcities, and the wage-cost-price spiral takes another turn.

International Situation. Throughout the past decade, the troubled international situation has remained a potential and often highly active source of inflationary pressure. The effects of international developments upon commodity prices are obvious in the economic aftermath of World War II and in the inflationary outburst sparked by the war in Korea. Moreover, the need for a high state of defense preparedness continues to be reflected in the large and rising federal budget. the consequent heavy tax burden which in turn adds to production costs, and the apparent impossibility of achieving a budget surplus adequate to offset inflationary expansion elsewhere in the economy. Beyond this, the precarious state of world affairs is surely a powerful consideration in the economic decisions of business and the public, presumably leading to a greater inclination to spend on capital and consumer goods than would otherwise be the case. Thus the international situation seems to impart a further inflationary bias to our economy and probably to the entire world economy.

All signs indicate that this bias will persist for some time to come. In the United States, unlike some European countries, the Suez crisis did not precipitate a wave of forward buying, but defense spending is on the rise and, together with higher demands for foreign aid, is increasing the Treasury's budget problems. Also, the Suez crisis has given impetus to increased capital investment programs which will be a factor in the economy for some years to come. Finally, another crisis in world affairs could well generate a price inflation comparable to that which erupted with the outbreak of fighting in Korea. Experience in the postwar decade suggests that restraints are not likely to be applied with sufficient dispatch and efficacy to prevent a round of markups in prices, costs, and wage rates throughout the economy. Genuine progress toward world peace could, of course, rapidly alter these prospects; but, unfortunately, there seems to be very little promise of such a development at this time.

Growing Acquiescence. With so many powerful inflationary forces at work, it is perhaps not surprising—but assuredly disconcerting—to

observe the spreading conviction that the purchasing power of the dollar is embarked on a relentless decline that seems destined to continue over the long run. As this conviction grows, it becomes an increasingly potent factor in boosting current demands, accelerating price increases, and intensifying the inflationary process.

As might be expected, the fear of chronic inflation appears to have taken root first within the financial community. In recent years, a growing number of institutional as well as individual investors have evidenced greater preference for equity securities. Moreover, the tendency is spreading to incorporate in long-term contracts provisions designed to protect the beneficiary against rising living costs; examples are variable annuities and wage agreements that contain escalator clauses

Also, business decisions seem increasingly to reflect the acceptance of inflation as a permanent trend. Businessmen have learned that post-ponements of plant and equipment projects have almost invariably entailed higher costs at a later date, and this experience provides strong incentive to the acceleration of expansion programs, especially in view of the general expectation of rapidly growing markets. Accompanying this is the readier acquiescence by business managements in higher wage scales and other costs, apparently on the premise that in an inflationary environment these costs can more readily be passed on through increased prices.

Conceivably, these tendencies may now be spreading to the public works sector of the economy. The voters in November, 1956, approved a record 2.5 billion dollars of state and local government bond issues. While this reflected mainly the very real needs for more facilities and the sustained prosperity of recent years, which traditionally raises demands for more projects, the awareness of constantly mounting costs may also have been a factor.

Among the general public, there is little evidence so far of a flight out of the dollar; life insurance contracts, savings deposits, and various other holdings of fixed-dollar obligations by the public continue upward. If inflationary trends persist, however, the possibility that the public's confidence in the currency may be shaken cannot be dismissed, especially since such a development need not come suddenly and conspicuously but, as has happened elsewhere, the flight into tangibles may pass unnoticed at first and gain speed and strength over time. This is one of the real risks involved in the comfortable acceptance of moderate inflation—an acceptance which has spread disconcertingly among some economists and businessmen in recent years. The hazards of inflation are less clearly and immediately visible than those associated with deflation, but they are not thereby reduced; on the contrary,

they become the more treacherous as they gain familiarity and tolerance.

### Some Restraining Factors

Not all major forces at work in our economy, fortunately, are operating in the direction of higher costs and prices; otherwise, the economy would probably have already succumbed to virulent inflation. Some contrary trends and pressures have partly offset the effects of the inflationary ground swell. This probably helps to explain why at times it appeared that inflation had abated or even that the inflationary bias had been overcome. Restraining factors continue to operate and may, in fact, gain strength in the more proximate future.

Growing Industrial Capacity. The heaviest counterweight to the inflationary trend is the enormous productive ability of the American economy, fortified by the huge expansion in capacity in the past decade. Indeed, the rate of growth in industrial capacity in recent years seems to have been considerably greater than what might be regarded as normal in the light of past experience. The pace seems to be in excess not only of the long-term growth rate but also of that achieved in earlier periods of particularly vigorous expansion; for example, it has been estimated that our industrial capacity advanced by perhaps 25 per cent in the twenties but by about 50 per cent in the first half of the fifties; also, the share of national output moving into producers' durable goods currently is around one-fourth larger than in 1929.

Rapid expansion of productive facilities has been, and continues to be, a major source of strain upon the economy's resources and thereby a source also of inflationary pressure. Eventually, however, the existence of this great capacity and its further growth will provide an antidote to higher costs and prices. Some basic materials and industrial commodities that were scarce a year ago are now in adequate supply, and the coming year will bring into production further sizable additions to capacity in several important industries. The technological progress embodied in current expansion programs, moreover, should eventually permit substantial gains in productivity even though considerable time is often required before the operating efficiency of newly installed facilities can be fully attained. It may therefore be possible in later years to realize some of the anti-inflationary benefits of present large plant programs, unless demands for goods and services continue to soar.

Greater Competition. Rapid growth in productive capacity heralds some easing of inflationary pressure, not only through the prospect of greater abundance of goods of all kinds, but more specifically through more intense competition. While pricing policies vary among industries

and any generalization is fraught with exceptions, yet the record since mid-1955, when the inflationary wave began to surge, suggests that there is a visible relationship between price behavior and the supply situation among various broad classes of commodities. Prices have advanced most rapidly in the case of commodities for which productive capacity has been tight, supplies scarce, and production periods long. The price rise for capital equipment prominently illustrates this point. Despite higher costs, price increases for consumer goods have been much more modest and this has been true of durable goods as well as of nondurables; here productive capacity has been abundant and competition has remained keen.

Recent experience thus offers some substantiation to the thesis that greater capacity and more competitive market conditions may make it more difficult for business managements to pass cost increases on to the buyer. Instead, producers may find it necessary to absorb some costs out of profits, with a resulting squeeze upon profit margins and corporate earnings. This prospect is strengthened by the high expense associated with idle capacity. Producers in recent years have propounded the view that an excess of capacity is preferable to a shortage, but once new facilities are put in place, managements may become inclined to push output and sales, by price concessions if necessary.

Costs and Profits. Profit margins in some important industries have already narrowed in 1956, and we are now in a period when the latest round of price increases may face a test, at least on the consumer level. It seems doubtful that profit margins will fully return to their high mark of 1955; rather, the outlook for the time being at least is for competitive pressures to increase. With profit margins under pressure, some of the planned expansion in productive facilities will begin to appear less rewarding and less easy to justify, particularly if they pertain to goods already in ample supply.

A related consideration is the higher cost of construction and equipment. Itself a result of the investment boom, it has reached a point where at least some corporate managements find the aggressive pursuit of ambitious investment programs less attractive. Some capital programs are apparently being reviewed and some postponements or even cancellations in the months ahead would not be surprising.

In sum, several of the economic factors which in the past have led a business investment boom to top off seem to be gaining in strength. A relaxation in the pace of the present boom, needless to say, would noticeably ease the push upon prices and costs. Furthermore, in view of the feverish increase in business investment outlays in the recent past, it is conceivable that a more than nominal decline may develop in the course of the next year or two. Such a development, when and if

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it occurs, will have an important effect not only with regard to inflationary pressures but also on the condition of the economy as a whole. It should be kept in mind, of course, that the cause of price stability would be poorly served if new productive capacity should become so costly or so uneconomical as to create the possibility of renewed shortages in the somewhat further future.

Financial Requirements. A further consequence of persistent inflationary expansion is the pressure upon the financial position of business enterprise. Mounting outlays for inventories, receivables, and wages are being compounded by rising costs; at the same time, inflation greatly enhances the amount of funds required to finance new plant and equipment, since depreciation charges based upon book values do not provide adequate funds to replace obsolescent facilities. Hence business corporations find themselves increasingly strapped for working capital and long-term funds. As the pinch persists, more and more business firms are compelled to economize in their operations.

Corporate liquidity has declined sharply since mid-1955; the ratio of cash and government securities to current liabilities is now lower than it has been at any time since the thirties. Some corporate managements have doubtless underestimated the strain that higher activity and rising costs places upon their financial positions and now find their liquidity reduced at the same time that credit has become less readily available. As a result, managements face the need to husband their resources, which may lead to a more gradual pace of plant expansion, tighter control over inventories, and cutbacks in less essential or less profitable activities.

The restrictive effect of inflation upon the availability of financing is not limited to manufacturing but is evident also in other sectors of the economy. During much of the postwar period, the curtailment of demand that might have resulted from ever higher prices, particularly for homes, automobiles, and other important consumers goods, was thwarted at least to some degree by the progressive liberalization of lending terms. In 1954, the ready availability of financing at generous terms stimulated an upturn in residential building, and similar conditions in the field of installment credit contributed importantly to record automobile sales in 1955. As the economy continued to boom, however, credit became more costly, lending terms tightened, and the abundance of outlets for funds enabled lenders to be more selective—all of which has curbed the financing of marginal activities and has presumably moderated the pressure of demands for goods and services.

The growing financial strain resulting from wage and price inflation thus may gradually become an obstacle to the further progress of inflation. Whether this brake upon the inflationary spiral can take hold, however, depends importantly upon the role of public policy, particularly the policies followed by the Treasury and the Federal Reserve. These authorities have it in their power to permit the braking effect to continue, to reinforce it, or to offset the effect by taking steps which will make funds more freely available.

## The Role of Economic Policy

It would be heartening if the government's economic policies could be listed unreservedly among the forces exercising restraint upon the inflationary trend. Unfortunately, during a goodly part of the past decade, these policies have been largely designed to encourage and facilitate the growth of inflation. More recently, credit policy—and to a lesser extent fiscal policy—has shifted to the side of inflation's antagonists; but policy decisions continue to be affected by involved and often conflicting considerations, including the difficulty of obtaining for an anti-inflationary program that degree of popular support which is essential if inflation is to be checked.

Fiscal Policy. The record of economic history clearly demonstrates the crucial role of fiscal policy with regard to inflation. Fiscal mismanagement can lead to catastrophic inflation, as evidenced conclusively, by experience abroad. Appropriate budget policies, on the other hand, can contribute effectively to the containment of inflation originating from other causes, such as the wage-cost-price spiral.

A prime requisite is that tax policy be fashioned to meet the inflationary trend. The goal, in theory, is a contracyclical budget policy, with tax rates being raised and outlays curtailed as long as the labor force is fairly completely employed and the price level keeps advancing; but such an end is not likely to prove politically attainable. We may derive some comfort, however, from the fact that the United States tax structure is highly productive. Revenues rise rather promptly with the higher money incomes generated by wage and price inflation. The problem is to resist the moves for tax cuts that are inevitable when tax collections are improving but living costs, too, are on the rise.

An anti-inflationary fiscal policy must deal also with the expenditure side of the budget. The task here obviously is to curb the advance in outlays that tends to accompany rising costs. The government budget, as that of the individual or business firm, is not immune from the effects of price inflation, the more so as full employment, high incomes, and rising living standards strengthen the demand that government provide more elaborate services and facilities of various kinds. At present, moreover, the difficulties of controlling government spending are compounded by the troubled world situation. Requirements for

defense equipment and foreign aid have turned upward again and a realistic appraisal of the world situation, together with the rapidly growing complexity of modern military equipment, presages a high and rising level of government outlays for some time ahead.

The final but perhaps most important criterion for fiscal policy is the budget surplus or deficit. The most essential goal in an inflationary environment should be to achieve a substantial budget surplus. Budget deficits in a period of full employment and rising costs and prices necessarily add to the strain on economic resources at a time when the economy is already being pressed to meet demands for goods and services. Furthermore, since under these conditions a budget deficit cannot readily be financed out of new savings, the practical result is likely to be further resort to short-term credit expansion, the provision of increased liquidity to the financial system, and an additional impediment to credit restraint.

Credit Policy. Credit policy has regained stature and effectiveness on an international scale in the past decade as a number of major countries have again taken up the tools of central banking in an effort to restrain excessive economic expansion. In fact, the resurgence of credit policy has returned it to a position of almost equal rank with fiscal policy as an instrument of economic control. Moreover, it has been repeatedly demonstrated that central banks and national treasuries must work together closely and follow a common goal. A central bank cannot be oblivious to the credit requirements of the government nor can credit policy be really effective without the support of the fiscal authorities. But even if conditions are favorable, it must be realized that credit policy cannot by itself cope with an investment boom or a wage-cost-price spiral generated by complex factors outside the credit field; what credit policy can do, if supported by fiscal policy, is to foster an economic environment where pressures upon the economy's capacity are moderated and restraints upon inflation gain an opportunity to take effect.

The direct contribution of credit policy to the restraint of inflation proceeds through the commercial banking system. As the inflationary boom progresses, demands for bank loans increase, and if credit policy prevents bank reserves from expanding significantly, the commercial banks are compelled to liquidate investments—generally at advancing yields—to raise funds for lending operations. A corollary result is that credit becomes more expensive, banks become less liquid, the proportion of risk assets increases, lending standards are progressively tightened, and monetary expansion is slowed or stopped.

Moreover, credit policy has important repercussions beyond the banking and credit system. Awareness that the central bank is not À

dedicated to chronically easy credit but is prepared to use restraint tends to temper boom sentiment among business managements. Borrowers are put on notice that cheap financing will not necessarily be available as an escape from rising costs, and that when prices are raised, the restrictive effect upon the market cannot feasibly be overcome by the progressive relaxation of credit terms. Finally, as credit becomes more expensive, business managements are encouraged to review more critically their capital investment programs.

Factors Affecting Policy Decisions. Economic policy today is not the generator of inflation. Most pressures now active in the price system are not due to present economic mismanagement by government. Rather, economic policy now stands as the balance wheel in the machinery of inflation. Ineptly conceived government action will facilitate if not actually stimulate a continuing upward push upon costs and prices. Used judiciously and with courage, economic policy can help check the inflationary trend in favor of sound economic growth.

How firmly economic policy in the future will be employed to counteract the inflationary pressures constantly resurgent in our economy is an open question. Much progress has been achieved in this respect in recent years, but policy considerations inevitably encounter political and other resistance; also, the goals of economic policy may occasionally conflict with other policy objectives, such as defense, foreign policy, and social welfare programs.

Significantly, a number of important proposals are today being sponsored which run counter to the aims of inflation restraint; such proposals include those calling for: (1) increased farm price supports, which would boost food prices at a time when living costs are already setting new peaks; (2) larger public works, even though record construction outlays are pressing upon available manpower and materials; and (3) federal action to ease the shortage of credit for certain favored groups of borrowers, such as builders and homeowners, state and local governments, and small business. Needless to say, the enactment of important measures along such lines would greatly jeopardize the effectiveness of policy actions seeking to curb the price rise and would probably tip the balance in the direction of further strength for inflationary pressures.

## Coping with Inflation

Inflationary pressures are deeply rooted in the economic, social, and political institutions and practices of our times, and the question thus remains whether we can avoid a persistent inflationary tilt in our economy over an indefinite future. The only possible answer is in the affirmative: chronic inflation *can* be avoided, provided sufficient efforts

are made to cope with it. The crucial question is whether we are willing to accept the restraints required to prevent continued erosion in the purchasing power of the dollar.

Economic Forces Appraised. Inflationary trends bring into being some strains and pressures which automatically serve as a restraint upon further rapid expansion. Some of these are already at work. Growing competition, rising costs, and reduced liquidity seem to be dampening the boom in capital spending by business, and a reduction in such outlays is conceivable in the years ahead.

No important restraints are at work, however, to moderate the constant and rapid advance in labor costs which has contributed so greatly to the inflationary bias in our economy for a decade and more. Population statistics indicate that the labor supply will still continue to grow at a slow pace for some time to come, and political considerations also tend to favor the bargaining power of labor. Thus, the outlook is that labor will continue to press for even higher wage rates and other benefits, perhaps more moderately in years of business slack, but all the more energetically in a period of economic expansion.

Equally, no effective bulwarks have developed to halt the unrelenting and disturbingly swift rise in construction costs, which has outpaced practically all other indicators of economic change. With a large public works program looming, the trend is likely to continue upward and to add persistently to the cost of producing goods and services.

Passive reliance upon automatic restraints, therefore, will hardly suffice to cope with the demonstrated inflationary bias in our economy, even if these restraints are permitted to exercise some effect. Rather, further and more active steps are essential. One of these is greater moderation in wage bargaining than has been evident in the postwar era. Wage increases must be more realistically linked to gains in productivity. If achieved, this should make possible a further prerequisite; namely, that business managements make more vigorous efforts to secure part of the gains of technological progress for the consumer in the form of lowered prices or improved products. But it will be difficult to achieve this without the active support of public policy. Therefore, the major restraints upon the inflationary trend will still have to be supplied by national economic policy; that is, by persistent efforts to curb economic booms through the use of fiscal and credit measures and any other devices that may be made available. For if public officials relax into a comfortable acceptance of inflation, that acceptance cannot long be hidden from businessmen, labor leaders, and the general public.

A Bias in Policy. The difficulties of formulating and carrying out an effective economic policy designed to fight inflation are manifold.

Perhaps a basic difficulty is that national attention has remained preoccupied with the problems of depression and deflation, whereas the real economic problems of the past fifteen years have been posed by a fairly sustained business boom, repeated strains upon the supply of labor and materials, and inflation of wages, costs, and prices. Because of this concern with depression, economic policy has tended to react swiftly and forcefully to the first signs of a downturn in the business cycle but to respond only gradually and gingerly to the growing momentum and problems of an upturn.

Experience in the full business cycle of 1953-56 is illuminating. As business sagged, taxes were cut sharply, credit was eased excessively, and substantial liquidity was built up in banking and business, which in turn facilitated the resurgence of an investment and consumer boom in 1955. But the very vigor with which these steps were taken made it more difficult to sap the strength of inflation in 1955 and 1956. Liquidity declined, but this became a restrictive factor only after inflationary forces had made substantial headway. Furthermore, it has not been possible to raise tax rates. Treasury spending is on the rise, and the federal budget, which did not provide as much restraint to inflation as was desirable in 1956, is to make even less of a contribution to the containment of inflation in 1957. A lesson of this experience may well be that, in an economy where growth trends predominate, the formulation of economic policy designed to meet a business setback should proceed with an eye to the subsequent period of expansion, when inflationary forces may again become active.

The problem of employing public policy to check inflation is admittedly compounded by the fact that the United States is confronted with a shortage of new savings, and this limits the amount of capital investment that can be supported without inflationary repercussions. We are today paying the price for the fiscal and credit policies of many past years designed to encourage consumption and discourage saving. Moreover, if the American economy displays the dynamism so widely anticipated in the years ahead, shortages of savings may be neither uncommon nor infrequent.

This shortage of savings has at least two main implications for public policy. First, tax policy must give considerably greater attention to measures that will encourage saving. The second is that the forces operating in a boom to curtail investment spending must be permitted to become effective; these include tight credit, reduced availability of funds, and higher borrowing costs. The danger is that public policy will endeavor to prevent these restraints from operating in areas of investment that are politically popular, such as public works and home building. Special relief to favored classes of borrowers, however, im-

plies either that funds will be directed into the desired channels by fiat rather than through the operations of the market place or that efforts will be made to float away the shortage of savings with the help of bank credit, thereby giving added impetus to inflation.

Is Inflation Avoidable? In appraising our prospects for coping successfully with the inflationary trend, it must be realized that inflation—at least in its early stages—is attractive to many politically powerful groups. Inflation curbs are less popular, are less actively supported, and are pressed with less vigor than are policies designed to cope with economic contraction. Furthermore, as the progress of inflation begins to pose hardships, the temptation is to temporize rather than to deal with basic conditions and to propose relief measures that merely add to inflationary pressures.

For the present and the foreseeable inture, therefore, the economy is likely to face continuing inflationary pressures. This does not imply that the outlook is for a continuous and persistent year-by-year rise in the price level, nor does it rule out the prospect of cyclical fluctuations in economic activity. Rather, the implication is that while business and prices may be expected to fluctuate in both directions, the underlying secular forces at work make the price level more vulnerable to upward pressures and more resistant to declines.

Should these pressures toward a higher price level develop increasing intensity over the years, the consequences for our economic society could become far-reaching and serious. Abroad, inflation has repeatedly led to economic, political, and social disturbances of a fundamental nature, and while price inflation in the United States has not been virulent so far, the gradual pace of its progress does not necessarily dispel the grave peril to our national welfare. The very fact that inflation has been less conspicuous in the United States than in many other countries has probably made us more tolerant of its operations and less aware of the menace it creates. Nonetheless, we shall have to summon the energy and determination to deal with this creeping problem if we are to build a solid foundation for our economic future.

## NOTES ON SUBCYCLES IN THEORY AND PRACTICE

# By RUTH P. MACK National Bureau of Economic Research

Study of subcyclical fluctuation is young and a report at this time on the year and a half's work at the National Bureau correspondingly premature. But fellow craftsmen often have most fun with one another's work—and are most helpful—while the work is still too crude to expose to the layman's eye. It is in this spirit that I would like to sketch a bird's-eye view of the investigation. In the same spirit—that of shop talk—I would naturally wish to submit basic tables and charts upon which generalization rests. But unfortunately space does not permit publication of even the four most pertinent basic tables that I have used in writing this paper. At best, therefore, I can only hope to pose an interesting problem, give some notion of its scope, and hint directions for its partial solution.

### I. Specific Subcycles

Individual business activities are subject to spurts and declines that occur considerably more often than we have generally recognized. After removing the usual seasonal variations, there remains in many if not most monthly or quarterly time series, not only broad trends, fluctuations of the general order of business cycles, and a series of saw-toothed choppy movements, but an intermediate short wave likely to last, on the average, somewhat short of a year and a half from start to finish. These movements have typically been dismissed as random.

But my study of the shoe, leather, and hide industry provides an economic rationale for them. There they occurred at the same time throughout the sequence of operations by which hides moved from a raw material to finished shoes owned by consumers. The same fluctuations appeared in the prices of hides and leather. They appeared and were accentuated in inventory investment and in orders. Their basic underlying phenomenon was an alternating over- and underbuying of materials. It seemed to involve broadly two sets of causes. One derived from the need to validate a precise and firm inventory objective when buying of stock-in-trade must of necessity precede knowledge of customers' purchasing. This need, which seemed clearest at the retail

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<sup>2</sup>Consumption and Business Fluctuations: A Case Study of the Shoe, Leather, Hide Sequence (National Bureau of Economic Research, 1956).

 $<sup>^{\</sup>rm 1}\,\mathrm{Some}$  multigraphed copies are available at the National Bureau of Economic Research.

stage, tended to produce short fluctuations because error in procurement tended to be a mirror reflection of rates of change (monthly first differences) in sales, and these errors were reversed in subsequent buying. The second type of generating mechanism involved the timing of buying with a view to making the most of changing expectations about delivery periods, adequacy of selections, and price. These changing market prospects cause recurrent shifts in the amounts of goods on hand and on order. One can spell out in some detail—as I have done in my book on the shoe industry—how these and other elements combine to produce waves which swell, reach ceilings, necessarily reverse, fall to a floor, and necessarily reverse again. Similar waves have been studied in the textile industries by Thomas Stanback and Bert Hickman.<sup>3</sup> Both the tendency to fluctuate and the tendency to reverse derive from basic business objectives and the conditions under which they must be pursued. Obviously this sort of thing cannot be quarantined to one or two industries in a common business environment.

When, therefore, I recognize as a subcycle a fluctuation that has previously been ignored as random, I do so having in mind a constellation of economic events that might be responsible for the wavelets in activity, price, or whatever, in particular industries. It is important to learn more about this constellation of events, both for itself and for the light it can throw on major business fluctuations.

To this end we first examine records of all sorts of business activity to determine whether fluctuations of the fifteen-month variety seem apparent in them. Resorting to the Bureau files, charts may be examined in which specific cycles-fluctuations of the same order as business cycles—have already been marked. These charts are now examined to identify additional wavelets that might be attributable to the sorts of factors we tentatively believe cause subcycles. Though I fix no minimum duration, I try to avoid marking movements that could reflect simply the chances that throw much more business into one or two months than into the previous or following ones. Ideally the decision ought to rest on knowledge of the actual factors responsible for each of the gyrations in the data. In practice, we can only use clumsy rules and fallible judgments. We look for sequences of progressive rises or falls, or for juxtaposition of high and low levels. Sometimes we mark a level area (never merely a retarded rate of change) in sharply sloping banks. We identify the movements with the time scale concealed. We view the charts upside down as well as right side up. Of course, it would be fatal to the investigation to see subcycles more willingly at one

<sup>&</sup>lt;sup>3</sup>Thomas M. Stanback, Jr., "Short Run Instability in the Cotton Broad Woven Goods Industry, 1946-51" (unpublished dissertation, Duke University, 1954), and Bert G. Hickman, "Cyclical Fluctuations in the Cotton Textile Industry" (unpublished Ph.D. dissertation, University of California at Berkeley, 1951).

time than at another. But needless to say, these rules for rectitude are no substitute for conscience or a sense of humor. The minor contractions during cyclical expansions or minor expansions during cyclical contractions are called "countercycle subcyclical" phases—"counterphases" for short. Subcycles, then, are a continuous sequence of waves in which peaks or troughs may be those of cycles or of the minor movements newly identified. In any individual series, we call them "specific subcycles," following the Bureau designation of specific cycles. In industry at large they are called "reference subcycles"—a briefer counterpart of the reference cycles or business cycles.

When specific subcycles were marked on thirty-three series,4 most of which run from 1875 to the present time, subcycles were found to average 15.4 months if all of the marginal choices are included and 19.0 months if we include only movements of whose presence one feels more sure. But subcycles, like cycles, are definitely not periodic. Their durations vary substantially. Average deviations represent about 40 per cent of their average duration. This ratio, though a trifle higher than the corresponding one for cycles, represents of course a far smaller deviation in months.

Specific subcycles tend to be composed of two phases of quite unequal length. The movement that accords with the major cycle trend —the paraphase—tends to be longer than the movement that opposes the trend—the counterphase. More particularly is this true of subcycles other than the shorter ones. For the wide variation in durations is found in the paraphases. The counterphases cluster quite heavily in durations of three, four, and five months, though they would be longer if peaks and troughs were marked at the point of sharp inflection rather than of absolute change in direction.

Subcycles in output, in prices, in sales, and in inventory investment

<sup>4</sup> Series used for parts of the whole stretch of years are listed together. A single asterisk indicates that the conformity of the series as indicated by a combination of seven conformity measures was better than average for the sixty-five years as a whole; the double asterisk indicates that this was true for each lap of about twenty years. The thirty-three

General Output: bank clearings outside N.Y.C. and bank debits outside N.Y.C.; freight ton-miles; total imports\*; month-to-month change in index of factory employment\*; cattle slaughtered under federal inspection; wool receipts in Boston, domestic and foreign\*; boot and shoe shipments, Boston, and index of wholesale shoe sales\*\*; anthracite

eign\*; boot and shoe shipments, Boston, and index of wholesale shoe sales\*\*; anthracite coal shipments and production and bituminous coal production\*\*; visible supply of tin in licensed warehouses; imports of crude rubber\*; pig iron production\*\*.

\*\*Capital Equipment:\* pig iron production\*\*\*; pig lead receipts, St. Louis and lead ore shipments, Joplin District; building permits, Long's index, and building permits, 120 cities, Bradstreet; index of orders of railroad equipment\*\*.

\*\*Finance:\* number of business failures; cash obtained through new securities issues, Ayres, and total new corporate issues, U. S., Canadian and foreign, \*Commercial and Financial Chronicle;\* number of incorporations; number of shares of stock sold\*; index of common stock prices, Standard and Poor\*\*; call money rates.

\*\*Prices:\* pig iron\*; copper\*; lead\*; zinc\*\*; wrought iron scrap and steel scrap\*; furnace coke and beehive coke; rubber, value per unit of imports and crude rubber; gum turpentine\*; tallow; steer hides; lard; raw silk; print cloth.

pose many riddles to the student of business fluctuation, though, as I said before, we can say quite a bit about how they may come about. But the frame of reference of study must certainly be different depending on whether there seems to be a tendency for a wide variety of activities to experience subcyclical fluctuation at about the same time. It is to this question to which the rest of the paper is addressed. I ask three questions: When did subcycles occur? Where did they occur—in what areas or aspects of the economy were they strongly evident? Why do they occur: Is there a mechanism sufficiently swift and strong to keep these brief rises and falls in many industries moving in step?

## II. When Subcycles Occurred in Industry at Large: the Reference Subcycle Chronology

In the course of determining when periods of cyclical prosperity or depression were interrupted by a fairly general cessation or reversal of the dominant cyclical trend, we provide a working tool for further analysis—a reference subcycle chronology.

It is useful to inquire into the presence of subcycles over a considerable period of time; consequently detection must rest on venerable historical time series. Search through the Bureau's treasure of economic time series yielded thirty-three suitable monthly (in a few cases quarterly) series which were available during most of the last quarter of the nineteenth century and, though sometimes in a different variant, are still available and meaningful today. They cover physical output of a number of industries, some of which produce capital and some consumer's goods, selected sensitive prices, and financial data. Purposely excluded are composite measures of business activity, and events that do not conform moderately well and reasonably promptly to major business fluctuation.

As mentioned before, specific subcycles were marked in each of these series. A method was devised for organizing information concerning confluence of specific subcycle fluctuation for all of the series and for each of the major groups: general production, capital goods production, finance, and prices. Relying heavily on these data but resorting also to several other sorts of information, I have tentatively selected twenty-three intervals over the past eighty years when substantial reversals or cessations of the cyclical tide seem to be taking place. How all this was done is rather a long story which will be told elsewhere.

Underlying the selection is necessarily a definition and it is the fate of an investigator to work almost inevitably at so early a stage of study with a definition that is not clearly the right one. The information required to correct or verify it is not at hand. The reference to interruption of cyclical tides (I refer to tides of the "forty-month" cycle)

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implies the application of the same central notions on the basis of which cycles were selected—the double requirement of a "fluctuation found in the aggregate economic activity . . ." and "occurring at about the same time in many economic activities." The consolidated information for the output groups may be thought of as indicating the course of aggregate activity (though hindsight suggests the selection of series was not entirely ideal) whereas finance and prices, at least one of which was required to participate before a movement was considered, give an indication of dispersion. As Thomas Stanback points out, these requirements have a cost in lost information, and only further study can indicate how subcycles should be defined and indeed whether definition in terms of congeries of historic events rather than of a central process (such as over- and underbuying of materials) is the more appropriate.

The end result of the rather elaborate process of selection was a sequence of tentative dates of reference peaks and troughs. They are given in Table 1. Two counterphases not listed are contractions starting early in 1947 and 1951.

A variety of tests were then made of the conformity of the thirty-three series to each phase from 1875 to 1941. Particular reliance was placed on four of the tests, two of which (the Bureau's standard indexes for absolute and trend corrected conformity) are based on how each series behaves between the initial and terminal dates of a reference phase and are thus independent of the selection of specific subcycles and two of which are based on the per cent of months in each reference phase during which each series was in like specific subcyclical phase. For some counterphases, these measures were as strong as for many business cycle phases, for others they were weaker, and for still others they were so weak that they raise a question as to whether the interruption of cyclical trends was sufficiently general to warrant demarcation as a subcycle. The figures in column 4 give an idea of the relative clarity of the twenty-one movements as judged by the four conformity measures applied to the thirty-three series.

At issue are a few of the movements—those with the high-rank numbers, for which the actual level of the conformity measures is suspiciously low. But the level of these figures is a function of the particular series included in the tests. Had more weight been placed on the notion of aggregate activity as represented by production and its surrogates, counter movements would have been clearer. If dispersion had been focused more on the prices of sensitive nonagricultural prices—the sort most likely to be associated with general buying waves—

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<sup>. &</sup>lt;sup>5</sup> W. C. Mitchell, Business Cycles: The Problem and Its Seiting (National Bureau of Economic Research, 1927), p. 468.

TABLE 1
SUBCYCLE REFERENCE CHRONOLOGY, 1875–1941, AND RELATIVE CONFORMITY OF THIRTY-THREE TEST SERIES® TO EACH COUNTERPHASE

Reference Dates			Type of Phase			Average Rank Standing for
(Cycle Dates Marked *) <sup>b</sup> Trough   Peak   Trough		Expansion (E) Contraction (C)	Relation of Subcycle to Cycle Phase	Phase Duration, Months	Counterphases Lowest Conformity Ranked 21d	
Trough	1 Cak		101.(0)	·		Ranked 21
			(1)	(2)	(3) 12	(4)
	Jul. '75	Jul. '76	$\underline{C}$	para	12	
Jul. '76	Dec. '76	T 1704	$\frac{E}{c}$	counter	5	. 17
Jan. '79*	Dec. '76 Mar. '80	Jan. '79*	C	para	25 14	1
Jan. 19"	Mar '80	Jul. '80	E	para counter	4	. 1
Jul. '80	Mar. '80 Oct. '82*	յա. 80	F	para	$2\overline{7}$	1
jui. 00	Oct. '82*	Jan. '85*	. 6	identical	27	
Jan. '85*	Mar. '86		$\stackrel{\circ}{E}$	para	14	
	Mar. '86	Aug. '86	C	counter	5	16
Aug. '86	Apr. '87*		$\boldsymbol{E}$	para	.8	
	Apr. '87*	'Apr. '88*	C	identical	12	
Apr. '88*	Jul. '90*	36 1043	$\frac{E}{G}$	identical	27	
Mar. '91*	Jul. '90* Feb. '92	Mar. '91*	C	identical	8 11	
Mar. 91	Feb. '92	June '92	E C	para counter	4	15
June '92	Feb. '93*	June 92	F	para	8	15
June 72	Feb. '93*	Aug. '93	Č	para	6	
Aug. '93	Jan. '94		$\check{E}$	counter	6 5 5 5	21
	Jan. '94	June '94*	$\overline{C}$	para	5	•
June '94*	Nov. '94		$\boldsymbol{E}$	para	5	
	Nov. '94	Mar. '95	C	counter	4	18
Mar. '95	1 Oct. '95* 1		E	para	7	
C 106*	Oct. '95* Oct. '97	Sep. '96*	Č.	identical	11	
Sep. '96*	Oct. '97	T1 200	E	para .	13 9	11
Jul. '98	Oct. '99*	Jul. '98	E	counter para	15	**
Jul. 90	Oct. '99*	Sep. '00*	Č	identical	11	
Sep. '00*	Jul. '01	Scp. 00	E	para	10	
	Jul. '01	Jan. '02	$\vec{c}$	counter	6	20
Jan. '02	Mar. '03*		E	para	14	
	Mar. '03*	Jul. '04*	C ·	identical	16	
Jul. '04*	Jan. '06		E	para :	18	
T 1 100	Jan. '06 May '07*	Jul. '06	<u> </u>	counter	6	14
Jul. '06	May '07*	Feb. '08*	E	para	10 9	
Feb. '08*	May '07* Dec. '08	reb. vo	E E	identical para	10	
reb. oo	Dec. '08	Mar. '09	Č	counter	3	12
Mar. '09	Tan. '10*	111111111111111111111111111111111111111	$\check{E}$	para	10	
	Jan. '10*	May '11*	$\overline{c}$	identical	16	
May '11*	Tan. '13*		E	identical	20	
	Jan. '13* Feb. '16	Dec. '14*	C	identical	23	
Dec. '14*	Feb. '16		E	para	14 .	12
A 116	Feb. '16	Aug. '16	C	counter	6	13
Aug. '16	June '17 June '17	Tam 210	E	para	10 · 7	7
Jan. '18	Ang 118*	Jan. '18	E	counter para	7	,
,	Aug. '18*	Mar. '19*	Č	identical	7	1
Mar. '19*	Aug. '18* Jan. '20*	1	E	identical	10	
	Jan. '20*	Jul. '21*	· C·	identical	18	1
Jul. '21*	Jan. '20* May '23*	ļ -	É	identical	22	
:	Mar. '23*	Oct. '23	C	para	5 4	
Oct. '23	Feb. '24	T 1 104#	(1)CECECECECECECECECECECECECECECECECECECE	counter	4 5	8 .
	Feb. '24	Jul. '24*	C	para	٥	

TABLE 1—(Continued)

Reference Dates (Cycle Dates Marked *)b			Type of Phase		701	Average Rank Standing for
			Expan- sion (E) Contrac-	Relation of Subcycle to	Phase Duration, Months	Counterphases Lowest Con- formity
Trough	Peak	Trough	tion (C)	Cycle Phase		Ranked 21 <sup>d</sup>
Jul. '24*	Jan. '25		ECECECECECECECECEC	para	6	40
3.5 10.5	Jan: '25	May '25	Ç	counter	4 7 5 5 13	10
May '25	Dec. '25	35 100	E	para	1	2
35 106	Dec. '25	May '26	C	counter	္န	_ Z
May '26	Oct. '26* Oct. '26*	Nov. '27*	E.	para identical	12	
Nov. '27*	June '29*	1400. 27	L E	identical	19	
100. 21	June '29*	Jan. '31	E C		19	
Jan. '31	Apr. '31	Jan. 31	E E	para counter	13	19
Jan. 31	Apr. '31	Jul. '32	Č	para	3 15 3 5 4 4 6 4 31	17
Jul. '32	Oct. '32	Jui. 52	F.	counter	3	4.5
jui. OL	Oct. '32	Mar. '33*	$\tilde{c}$	para	5	1 2.0
Mar. '33*	Tul. '33	man. oo	$\stackrel{\smile}{E}$	para	4	
1.1.411	Tul. '33	Nov. '33	$\tilde{c}$	counter	1 4	3
Nov. '33	May '34	2.07. 00	$\widetilde{E}$	para	6	
	May '34	Sep. '34	$\overline{c}$	counter	4	6
Sep. '34	Apr. '37*		$\tilde{E}$	para	31	
_	Apr. '37*	May '38*	C .	identical		
May '38*	Dec. '38	_	E	para	13 7 5 6 5	
-	Dec. '38	May '39	C	counter	5	9
May '39	Nov. '39	-	E	para	6 .	
•	Nov. '39	Apr. '40	C	counter	5	4.5
•	l		•	•	r	•

a For thirty-three test series, see text note 4.

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c "Para" phases are subcycle phases that parallel the current phase of the forty-month

business cycle as defined by the Bureau's business cycle chronology; "ccunter" subcyclical phases interrupt the current cycle phase; subcycle phases initial and terminal turns are turns in the cycle chronology are "identical" to the cycle phases.

d The four measures discussed in the text were calculated and ranked. The sum of the four ranks for each phase was then assigned a rank. All comparisons are made after taking into account the typical lead or lag of the specific series relative to the reference frame. For about two-thirds of the comparisons, no adjustment was required. Adjustments for about one-tenth of the cases consisted of leads or lags of two months; the rest were adjustments of one month

most movements would have been clearer yet. Be that as it may, the fact to be remembered is that the subcycles are some portion of a continuum at the lower end of which chance alone could account for the extent to which individual industries or aspects of economic life, each of which is subject to short fluctuations as well as to major cyclical rhythms, experience countercycle movements at the same time. I expect to have cut off the chronology well above the point where concurrence may be due to chance. Not explained by the phenomena of the lottery, an economic explanation of integrating mechanism is definitely required.

b Business-cycle dates are marked with an asterisk. The dates given are those used for the cycle turns in the reference subcycle chronology. These turns correspond, one-to-one, to turns in the Bureau's business cycle chronology, but the precise dates differ in a number of cases since it was necessary to apply the same principles of selection to both the minor and major turns in the subcycle chronology. This has reactivated an old question about the need for re-examining the cycle chronology (see Burns and Mitchell, Measuring Business Cycles, pp. 94-114).

The reference subcycles as tentatively marked average about twenty-two months in duration, if the years of actual fighting in World War II are excluded. Omission of three or inclusion of three additional counterphases would change the average length by a few months. Note that the exclusion of doubtful phases has caused reference subcycles to be longer than is found on the average for specific subcycles in individual series which seem to average typically fifteen to eighteen months in length.

Two additional comments: The average duration in no sense represents a true periodicity; there is a great variation of individual subcycle durations around the average—41 per cent of the average duration. Reference subcycles, like specific subcycles, are composed of two quite different phases: those interrupting the cyclical tides tend to be relatively short and relatively uniform in length compared with those paralleling the cyclical tide.

Finally, it is essential to bear in mind that the periods of general interruption of the forty-month business cycle would not appear if one is content to continue to ignore as "random" the waves in individual series that we call minor subcycles. At issue, then, is the notion of randomness which has relegated to uneasy oblivion many shorter or weaker movements than those accepted as cyclical in many economic time series. Apparently many of these so-called "random" movements have often occurred at about the same time in many economic events. This fact, along with the rationale that may be provided for them, suggests that they need a new name.

## III. Where Subcycles Are Found

Using the chronology of subcycles as a frame of reference, we ask now what sorts of economic events move most clearly and strongly with these minor business tides.

The question was first referred to each of the thirty-three test series for the period from 1875 to World War II for which a variety of conformity measures have been computed. The figures show that relatively good conformity to the periods of interrupted cyclical movements—the countercycle phases—characterized physical output, including the production of capital goods, both for series having broad coverage and those referring to individual industries. Good conformity also characterizes the prices of goods not of agricultural origin. Finance is represented only by stock market trading—volume and prices. The matter may be examined more closely by reference to the asterisks on the list of series in note 4.

The measures for early years raise questions that the richer data of the interwar period may be asked to answer, even though the answers پز

do not necessarily apply to the whole stretch of years. A variety of measures for conformity to counter phases of the subcycle chronology, 1921 to 1941, were used. The Federal Reserve Board index of total industrial production shows high conformity for the interwar period. This is almost equally true of each of the two subdivisions: durable and nondurable goods manufacture. Production data do not afford an opportunity for cogent additional inquiry. Data on employment, however, are available for fifty-seven to ninety industry subdivisions. Rates of change in employment are likely to be tied closely enough to output to warrant their study as proxy for interindustry differences in short-term changes in output. Using some fairly powerful techniques of generalization, I arrive at the following hypotheses:6 Industries manufacturing foods conform poorly to subcycles and, of course, to cycles, too, Heavy machinery equipment also conforms poorly. For the rest, we can cut across the matters of final destination and durability of product, since the chief variables seem to be these: subcyclical fluctuation is strong relative to cyclical fluctuation, other things the same (1) in the manufacture of goods in which a few basic materials constitute a large portion of total costs, (2) in the manufacture of unfinished rather than finished goods (and this distinction may simply reflect the first one), and (3) in the manufacture of goods for which major purchased materials have prices that fluctuate sensitively with business conditions.

It is important to learn whether differential sensitivity to subcycles starts with the demand of the final user. But unfortunately, information about retail sales or orders for industrial equipment is sparse and poor. For retail sales, only department store statistics are useful for the interwar period and we have data for the total store and for several departments; the measures assign the four series an approximately central average position for conformity to counter phases. Subcycles seem to appear at least as clearly in consumer durables as in semi-durables. But conformity to counter movements tends to be substantially stronger in rates of change than in sales proper—a fact that has a critical bearing on the process as I understand it.

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The shaky evidence on retail sales is braced by information on income flows, since peoples' income and the expectations that changes in income and employment give rise to are strong determinants of buying. The good conformity to counter phases of manufacturing

<sup>&</sup>lt;sup>6</sup> The industries were grouped on the basis of whether their products were (1) finished goods or semiprocessed; (2) whether the finished goods were durable, semidurable, or perishable; (3) whether they were destined for use by consumers or producers; (4) whether a few materials constituted a large part of total costs; (5) whether prices of these materials were relatively flexible or inflexible. The groups each included between six and seventeen industries.

production is reproduced in hours worked. The number of people employed, payrolls, and total personal income are in a somewhat better than central position. But rates of change for each of these series have a very high conformity to counter phases.

The buying of producer goods is also clouded by the mist of missing data. For at least part of the interwar period, we can assemble indexes of orders for a number of durable goods. Some of the series—notably the composite index and series referring to unfinished producer goods or machines purchased in significant part by small, perhaps financially weak, firms, have marked conformity to counter movements. But not so for major equipment purchase. A related fact seems to be that business profits, new incorporations, business deaths and the cost of credit (commercial paper rates), and bank loans other than on securities run their course without acceding to the small reversals in business. Of the financial group, only data reflecting speculative activity—the number of shares sold on the New York Stock Exchange and stock market prices—show notable conformity to countercycle subcycle phases.

In prices a selective pattern is also apparent. Prices of finished goods, whether at the wholesale or retail level, are not responsive to subcyclical fluctuation. Farm prices, insofar as they have short movements, do not have them in conformity with our chronology. Conforming subcycles are found, and very clearly, in prices of certain basic materials. This was apparent, of course, for the long series too.

## IV. Synchronizing Mechanisms

These findings serve a double purpose. They indicate facts that theory must explain. They point directions in which to hunt the explanation. A similar function is served by the other facts we have reviewed: the average duration of subcycles, the variability of paraphases, the brevity of counterphases, the fact that they are not new episodes but old, that some episodes are widely diffused in business as a whole and others narrowly.

The explanation must start with what is known of subcycles in individual activities. It must, for the time being at least, focus on the over- and underbuying of materials. It is possible to describe in some detail how fluctuations come about in a few industries and by implication in others, how they transfuse through a chain of operations that convert raw materials into finished goods, how prices are involved and in turn involve. Critical to the process and its significance is its intrinsic reciprocating qualities. If we can say what causes subcycles in an individual industry, then their presence in the economy as a whole implies a synchronizing mechanism whereby the several parts

and aspects of the economy are made to lock step. What may that mechanism be?

It is too soon to try to set down hypotheses. Yet I would like to say enough to give at least a notion of the kind of forces that may explain the facts that I have reviewed. Let me do little more than list their names.

I mentioned in section I of this paper two sorts of forces that seem mainly responsible for subcycles in individual industries. The first derives from fluctuations in final consumer buying and operates via a need to keep buying closely linked to selling. The need to guess what sales will be and to correct the inevitable error causes the rate of change in sales to be magnified in the buying of firms selling to final consumers. Consequently, if sales of many sorts of consumer goods and their rates of change tend to parallel one another there would be a tendency for subcycles to occur at the same time in the orders of many different industries. There is reason to think that such parallelism exists. The first synchronizing mechanism, then, and probably the most important, is the tendency for buying proper—and particularly rates of change in buying—of a wide variety of finished consumers goods to move together in subcyclical rhythms.

Second, the pattern of buying at the finished stage may reappear virtually instantaneously at any or all earlier stages, since it is orders rather than the physical process that paces the transmission of demand from the retail sale of finished goods back through its production and that of its constituent materials. At each stage, production is guided by demand as reflected in orders. Consequently, if stocks are adequate, as they typically are, production processes can start to reflect changes in final demand virtually immediately. This, then, is the second of the synchronizing mechanisms. It serves to prevent synchronized change in final demand from spreading out and dissipating as it is transmitted to earlier stages of production.

These two mechanisms tend to co-ordinate those forces making for subcycles in individual industries which operate through the wish to link buying to selling. But when goods are expected to be in short supply, when deliveries are expected to lengthen, when prices are expected to rise, the judicious buyer in many industries is likely to

<sup>&</sup>lt;sup>7</sup>I have discussed several of these matters more responsibly elsewhere: the process in one industry in Consumption and Business Fluctuations, op. cit.; the transfusion through a vertical sequence in "The Process of Capital Formation in Inventories and the Vertical Propagation of Business Cycles," Review of Economics and Statistics, August, 1953, pp. 181-198, and in "Retailers' Purchasing and the Telephone," in collaboration with Victor Zarnowitz; the role of expectations in generating reciprocating fluctuations in "Expectations and the Buying of Materials," Conference on Expectations, Uncertainty and Business Behavior (forthcoming publication of the Social Science Research Council, Committee on Business Enterprise Research).

buy more goods, of more sorts, longer ahead than usual. When supply softens, the direction of change in the volume of goods on hand and on order reverses and buying moves toward a hand-to-mouth position. This judicious timing of buying in view of shifting market prospects causes subcycles in individual industries to cumulate and then to reverse. Both cumulation and reversal operate in a number of ways within the industry sequence. Shifting prospects involve delivery periods, prices, margins, inventories on hand and on order in a ring of cause and effect in which expectations play a highly important part. Are these rings private to each industry or is there an integrating mechanism among industries? I mention five sorts that seem plausible.

- 1. The very changes in selling-linked buying that we have just discussed constitute parallel changes in demand for many different products, which under certain circumstances are properly interpreted by businessmen as tending to affect the short-term availability of goods and the prices at which they can be procured. These interpretations in turn affect the timing of buying. Advanced buying increases if goods are expected to be in short supply.
- 2. Certain external factors are likely to have implications for the availability of goods and change in prices in many markets. Examples are important government action or changes in the international scene, change in wage rates in the bellwether industries, change in interest rates, scarcity or abundance of credit that banks are willing to supply.
- 3. Synchronization is affected by the impact of supply conditions or prices for one commodity on others. Thus conditions in a raw materials market may affect many finished goods markets and likewise vice versa. Commodity prices may bear on one another or on security prices in the same industry.
- 4. A fourth set of factors derives from the cohesiveness of speculative judgments. "Psychology" is a common answer to questions about why market positions shift, but I doubt whether psychology is often without a grain of economic sand as kernel to its pearl. Examples of the cohesiveness of which I speak are the tendency to base judgments about market conditions in a given industry on unrelated speculative prices that exhibit themselves freely: stock market prices, commodities traded in open futures exchanges, scrap prices. But people also catch ideas about market prospects from one another; all of the contacts with competitors and colleagues, with customers and suppliers, especially the buyer-supplier relations of people who purchase in many markets or supply many markets, spread the contagion of market expectations.
- 5. A final factor tending to keep buying waves in many industries in phase with one another is a broad similarity among industries in the

pace whereby opinions spread from the first man to sense a new market trend to the last. Buying that constitutes extension or contraction of market positions augments in three ways: more people buy; they buy more sorts of goods; more of each sort of goods is purchased. Altered action depends on altered opinion and the sureness with which it is held. The spread of opinion and the spread of sureness takes time. It is the length of this time rather than the number of months' supply constituting the range between extension and hand-to-mouth buying which determines the length of time required for a buying wave to run its course. Thus a social process is common to buying waves in all industries and this social process may not be markedly dissimilar in industries that share broadly a time and place.

I have discussed apparatus of synchronization that deals with a first round of cause and effect, taking the pattern of consumer income as a point of departure; but other rounds of cause and effect follow. In all honesty, I suppose I should now display the truly shocking subcyclical model that my researches seem to build; it is only a partial model since it does not comprehend the interaction between the subcyclical process and aspects of the economy other than those central to these very short fluctuations. Also, I describe it most tentatively and can only say that at the moment these are the directions in which the work points. The model pictures fluctuations in consumer buying associated with fluctuations in consumer income. Business firms transmit to one another these fluctuations in buying. At certain points in the sequence, short-term aspects of change, particularly rates of change, are augmented in the buying of business concerns. Market extension or contraction results. There is a tendency for extension of market position to breed further extension, or for contraction to breed further contraction, as short-term supply and demand relationships, prices, and expectations play their parts. Time is required for the social process to mature and to recede. But the number of months' supply on hand and on order in any one industry has natural limits, which, though in the nature of a band rather than a line, serve to place a ceiling and floor to market extension or contraction. Reaching these limits makes for reversal, not for rest. Changes in buying result immediately in changes in sensitive prices and, with variable lags, in changes in production. Changes in income and in consumer buying occur without perceptible delay. Changes in commercial demand picks up a lead from rates of change in consumer buying and other market conditions. Changes in demand at one stage are transmitted via the order to all stages posthaste, or, indeed, with the electric speed of the telephone circuit, rather than by the slow and irregular pace of sequential physical operations.

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Note the abominable characteristics of the model: (1) No basic equilibrium tendency. The link to rates of change itself provides potential explosive properties; explosive properties adhere also to the link to expectations and the multidirectional causal relationships that result. (2) No necessary sequence. Though there seems to be a selling-output lag, there is no evidence of an output-income lag or of a consumer income-buying lag; in the vertical transmission of buying there may be a lead at certain spots consequent to its sensitivity to rates of change of several sorts. Time relationships may antecede, coincide, or follow. (3) Necessary oscillation. Cumulating gyrations are housed between a ceiling and a floor; hence the explosive model does not explode. Gyrations are paced and spaced by the duration of a social process; hence waves have a duration which is not infinitesimal but of reasonable length.

The model, with all its eccentricities, is not a model of business fluctuation but of one constellation of events—the over- and underbuying of materials—which is central to fluctuations that average some twenty months or so in duration. There may be other processes with similar durations; the volume of business and even the equipment buying of marginal firms is a candidate. The study of subcycles seems compatible with the conception of business fluctuation, as a composite of waves of different usual lengths, linked to different sorts of economic processes and problems, each of which generates waves of characteristic average periods. Fluctuations in economic activity increase in severity when each sort of fluctuation snowballs within its own class and when fluctuations of different sorts slip into phase with one another. Thus events linked to subcycles are often joined by events of other sorts which center in other business or personal problems, such as the acquisition of industrial equipment or plant or homes. The various kinds of fluctuations may, when conditions are ripe, set off and certainly supplement one another. In this way, a reduction in the purchase of capital equipment may set off inventory retrenchment. But the reverse sequence of events is also possible—the reduction in incomes that results from sharp contraction of market positions may, under certain conditions, change the expected pay-off period for the purchase of capital equipment enough to materially reduce the amount of equipment purchasing. Thus subcycles in general business are themselves a potential trigger mechanism and synchronizing mechanism for more serious business fluctuation.

#### DISCUSSION

EDWIN B. GEORGE: Mrs. Mack's paper, although broken into four parts, really has two broad sections. The first three parts present the product of intensive analysis of subcycles in some American economic series during the period 1875-1940. The fourth and longest part seeks to develop a theoretical explanation of the findings of this analysis, to high light the properties of the model it seems to define with special emphasis on those which the author considers to be discoveries and to indicate what the model implies with respect to the focus of stabilization policy.

My comment on the first section can be brief. I must confess that the wealth of material it contains, although swallowed, is still churning around in my digestive apparatus. Like the aspirin shown in those Bufferin television commercials, it has not been able to push its way into the bloodstream yet. As specific observations, I can only record my surprise at the percentage of series that so often appear to cluster in countercycle phases and state that I am as tentatively convinced as the author that her indexes of conformity are much higher than anything which chance would yield and equally content to await a final verdict on this question from the IBM monster. And after the infinite pains she has taken, this must be the comfort she most surely wants at the moment. For the rest, my general feeling is that the statistical manipulations represent an excellent example of the careful work we have come to expect in NBER staff analyses. I am usually appalled at the amount of care and skill that go into such efforts and this job is no exception.

The second section, on the other hand, has been very Bufferinish in its operation. I have already reached fairly definite and in some respects adverse judgments on its content—possibly because the preceding material has still to take full hold! What I have to say falls conveniently under two headings: Mrs. Mack's view as to the implications and originality of her results for the periods covered; and her fear that such results, insofar as correct, hold without substantial modification under existing conditions and will hold under prospective conditions failing changes in stabilization policy.

As to the first heading, Mrs. Mack feels that she has uncovered a "truly shocking model" with "abominable characteristics"—one lacking stationary solutions, possessing potentially explosive qualities, and proving unamenable to sequence analysis. The inquiries called for at this point, I think, are whether some of the properties of her model that she rightly derived from her analysis have not already been suspected, to which extent her achievement is a confirming and modifying one, no less valuable for that reason and critically needed at the present stage—we have been riding on this evidence long enough—and whether all of the discoveries are necessarily implied by the analysis. That her investigation establishes "basic oscillation" to be highly probable, I do not doubt. But that judgment is not altogether new. I have felt for years—and believe that a large number of economists

have, too—that there is strong reason to believe in the existence of endogenous cycles stemming from alternation of excessive and inadequate purchases of materials and stock-in-trade—and this Mrs. Mack herself describes as "the heart of the subcyclical process." When analyzed closely, some of the models afloat which depict self-propagating inventory cycles appear easily extendible to cover her picture.

As to the second characteristic, she cannot be certain that the functions would as a rule be so shaped as to yield explosive movements. (She probably does not even mean "explosive" in so literal a sense, so to avoid being unfair I'll say that for the moment I am on my own.) No doubt the factors which she discusses would lead to intervals of acceleration in rate of change, but from all we know the latter appears typically to undergo progressive damping as the process unfolds. The characteristics stressed—a lag of output on sales but virtual absence of a lag of income on output, of spending on income, and in vertical transmission of purchase orders—are, excepting the fourth, exactly those that Metzler identified from his empirical analysis of global data in "Three Lags in the Circular Flow of Income," a chapter in Income, Employment and Public Policy, 1948, (Mrs. Mack talks not merely of absence of lags of spending on income but of actual leads. The cases discussed, however, are ones in which formal receipt of income lags changes in output; to that extent they need not involve a lead of spending on output. In addition, they do not relate to the bulk of income.) So far as I can see, none of his models generate explosive movements (i.e., strong acceleration). Moreover, that which possesses the greatest instability involves among other things the assumptions that businessmen aim at a constant stock-sales ratio at every level of sales and that the (cyclical) marginal propensity to consume is constant. If for the latter assumption one substitutes something like those advanced by Duesenberry and Modigliani, and for the inventory business an inverse relationship between rate of sales and optimal stock-sales ratio à la Whitin—and both steps appear valid in light not only of theoretical considerations but historical evidence—a sharp reduction in degree of instability would result. To produce explosive movements, then, we would probably have to assume that for an indefinite period the elasticity of sales expectations tended to increase progressively (and thus order placement to fall or rise progressively) as sales themselves contracted or expanded. I do not find anything in her paper to support this particular hypothesis and do not know of other evidence suggesting that it is correct.

Finally, what about the alleged inapplicability of sequence analysis? This claim derives from the possibility that buying might leap around so erratically relative to income changes—sometimes leading, sometimes lagging, sometimes occurring simultaneously—that it is futile to attempt to work with any model, however complex, even as a first approximation: one is certain to miss the boat too often. I did not feel that up to the present point of development she has shown the case to be so desperate.

So much by way of comment on the novelty and formal aspects of Mrs. Mack's findings. Evidently nothing in what I have said establishes that big swings are improbable, but merely that explosive movements are not fore-

ordained. The system possessed all the specified properties before the war and still underwent serious fluctuations. In my judgment, however-and I come now to the second heading, that of the perpetuity of this behavior there is good reason to think that our position is now and will remain sharply different in this respect. We are now back to a familiar controversy. Professor Slichter has gone so far as to regard "the" business cycle as a thing of the past, claiming that the synchronizing apparatus has been weakened enough to insure that henceforward we shall seldom have to cope with more than "rolling readjustments." On this view, Mrs. Mack would be assessing the present and prospective uneasy peace in terms applicable only to the last one. I am not quite so sanguine about our status as Professor Slichter appears to be. Nonetheless—and quite apart from likelihood that both the magnitude and timing of discretionary action to contain swings will be more appropriate to the task than in prewar days—it seems to me beyond doubt that the system's basic vulnerability to fluctuations is now much smaller and will remain so. Most of the reasons for so thinking are well known but not less cogent for all that. I merely mention the following familiar properties: substantial growth in automatic flexibility: much higher proportion of total GNP for which federal purchases of goods and services account-largely a separate point from growth in antomatic flexibility although sometimes held to be its reverse side; significant upward secular trend in transfer payments -largely a postwar phenomenon; the farm price support setup—a complex sort of formula flexibility; and various insurance arrangements designed to block snowballing of downswings via forced debt liquidation.

It is true, of course, that the effectiveness of these factors depends in good part on willingness of the government to accept the deficits to which they give rise in case demand and revenues slide off rather than to cut spending or raise taxes and upon the ways in which deficits are met. But, despite a well-known Senator's penchant for tight ceilings in public debt, I believe we can safely count on automatic deficits and have reasonable hope that deficit financing will proceed in ways that do not reduce private spending. None of this warrants a judgment that we are in a "New Era" in the sense of having buried the cycle forever. In my view, we have not and perhaps never shall. But we are in a new era with respect to probable amplitude and duration of fluctuations. The economy hasn't got a glass-jaw propagating mechanism, it won't crumble when tagged with a few wallops, to anything like the same extent as in prewar days.

This brings me to Mrs. Mack's final assertion; viz., that "a major problem of a central economic management . . . is how to dissipate the synchronizing apparatus for subcycles in many industries and how to dissipate also the further apparatus tending to convert a subcyclical recession in general business to a general business reversal." I am a bit puzzled about how much to read into this, but on any interpretation do not yet feel that the problem is a major one—or at any rate about which much could be done that should be done. It is possible that Mrs. Mack intends to say merely that we could and should strengthen the system's built-in cyclical snubbers through improvement in automatic flexibility and judicious resort to formula flexibility and

in addition increase our capacity (and willingness) to take reinforcing discretionary action to contain further general swings in activity. If so, I would agree in full—though for reasons I have developed elsewhere. (See my paper, "Budget Policy for Economic Growth," in Federal Tax Policy for Economic Growth and Stability, a Joint Committee on the Economic Report, November, 1955, pages 43-58.) I would advocate measures that raise automatic flexibility only when such changes are desirable on other grounds and regard the scope for desirable resort to formula flexibility as rather limited. This interpretation of her language, however, does not appear valid since the changes envisaged—especially those with respect to formula flexibility and discretionary action—would bear upon activity in general, affecting submovements only when these were in the same direction as the over-all movement.

A second interpretation is that Mrs. Mack has in mind *ad hoc* measures to compensate variations in demand in specific fields, whatever the general economic environment at the time of intervention. If so, I disagree.

Finally, the statement might mean that Mrs. Mack sees the problem as one of finding ways to reduce what she labels the "native cohesiveness of speculative judgments"—an asserted tendency of businessmen to "catch ideas [about the outlook], like colds." Admittedly this is a strained reading of her words, but it would be covered by them and the objective is a desirable one. Here again, however, I believe we are in better shape than before the war. To take one example, so many Jeremaids have proved false in the postwar period to date that businessmen have become wary of acting on someone else's fears. A couple of times since the war, business has tried to talk itself into depression but failed because the conditions weren't right. In a growing number of cases such reluctance is being reinforced by steady emphasis in the business press on the plain prudence of expecting an impressive rate of secular growth in demand. Whatever the "elasticity of sales expectations" during downturns may have been prewar, I suspect it is lower now. Exploration of ways and means to teach businessmen how to keep their heads is all to the good, but I am doubtful whether much additional lessening of instability can be expected from further education. My guess, in other words, is that our hope for the future lies less in direct attempts to clog the synchronizing apparatus for subcycles than in general action designed to hold the movement of over-all activity within tolerable limits.

May I conclude by saying that I regard Mrs. Mack's most recent work as a fundamental contribution, in respect both to her discoveries and confirmation and correction of past surmises and believe that we will be referring to it for a long time.

Mr. Reierson has filled the role of military strategist for us, identifying, appraising, and deploying the forces that will be battling over the indefinite future for control over the purchasing power of our dollars. He sees victory for the inflationary elements—probably gradual, but not entirely lacking the potential of a major breakthrough. There is not too much more in his paper than outline; which evidences so much thought that I wish he would take the little additional time necessary to write the book.

One chapter of that book, I think, is needed now. He cannot and does not say that under any circumstances inflationary forces will prevail. As we sit here, we can all list at least a half-dozen cogent factors pushing in both directions, and directly or indirectly some of us make a part of our living by wrangling over which set will win out in 1957. Victory is in considerable part a function of the level of activity from which we take off—of the extent to which our resources are currently employed.

What I would still like to have from Dr. Reierson is his estimate or guess, by some measure—the per cent of the labor force unemployed being the most common, and both socially and politically useful, although I would never pinpoint it but rather think in terms of a range—of the level of resource use above which inflation is most likely to take hold. Policy on objectives, even if seldom explicit, is going to remain just as controversial as policies on the particulars that he enumerates.

Merely offering myself as a guinea pig, I do not personally believe that during peacetime we can maintain unemployment at a level approximating 2.5 per cent except at cost of a degree of inflation that would be very impressive if aggregated over a decade as well as of undesirable effects on resource allocation, etc. I regard our experience during the past fifteen months (and what seems likely to be our experience in a good part of 1957) as supporting this belief: wholesale prices, ex-farm and food products rising at an average rate exceeding 4 per cent per year, close to 50 per cent per decade, in the face of average unemployment running between 3.5 per cent and 4 per cent on a seasonally adjusted basis.

Those thinking otherwise cite 1953 experience, and indeed there is little else for them to cite. Actually the whole period 1951-53 was a temporal curio rarely likely to repeat itself. I have sometimes wanted to expunge those years from the record except as a fascinating exhibit, with a sign, "Do not touch." It was preceded by a grand rush for goods on the part of both business and consumers. Prices and wages were controlled, at least euphemistically during a part of this period, restraints on credit for durable goods and housing were similarly in effect, and by some chance the Congress enacted a truly antiinflationary tax program. Prices had soared and even after some setbacks were tired and created a sort of cushion to absorb future increases in costs which the fat economy of 1955 definitely flattened even though farm prices were down. And there were other special factors. History is in accord. It strikes me as unjustifiable to regard as shown by "experience" (which usually means 1953) to be feasible without inflation, a rate of unemployment below that of years like 1942 and 1952 which were marked by heavy demand and great pressure on prices (partly suppressed by direct controls) and not much above that for any year of World War II except 1945. (In all these comparisons I am dealing with the ratio of unemployment to civilian nonagricultural labor force, computed as total civilian labor force minus agricultural employment.)

One of our needs is to know the general neighborhood of activity (it cannot be more precise) within which Mr. Reierson's armies are likely to fight to a draw. Or are some of his inflationary forces so powerful, as he hinted at a

couple of places, that they are capable of pushing through any likely terrain, with only the amount of gain limited?

JOHN P. LEWIS: We have heard two very interesting and different papers. I have been asked to comment particularly on Mr. Reierson's. However, since I have had somewhat longer to contemplate Mrs. Mack's, I should like to say a little about it first.

Word about Mrs. Mack's work on subcycles has been in the air for some months. I am glad to say that the only ungarbled thing about the rumor that reached me was the term "subcycles" itself. For what I heard was that this was a word Mrs. Mack had invented for those downturns which the National Bureau's leading indicators signal but which do not happen. It is good to know that there is much more substance to the concept than this. But my reactions to the nature of the substance are mixed.

Certainly we must thoroughly admire—on this occasion as others—Mrs. Mack's fine craftsmanship and the grace of her presentation.

It is evident, moreover, that her achievement is a considerable one when judged by the highly specialized standards of the National Bureau's private brand of cyclical chronology. For she has added to the Mitchellian theme a new contrapuntal variation that has just the right blend of originality and conformity. She has enriched the art form without disturbing it.

Personally, I value much more highly certain valuable analytical and intuitive insights which crop out in those parts of her paper which are less preoccupied with chronology—notably her remarks about the integrating mechanisms which knit specific fluctuation into common patterns and some very sensible things she has to say in the area of what usually has been considered inventory theory.

The principal difficulty I have with the paper is not necessarily a serious one. It is simply that I kept looking for more novelty in the concept of the subcycle than I found. For unless I am badly mixed up, Mrs. Mack has described essentially the same phenomenon that often has been treated in recent years under the name of "the inventory cycle." To be sure, as she rightly emphasizes, the phrase inventory cycle is bad terminology, for it refers to only one of several dimensions in which the process in question registers. The process itself stems from the fortunate fact that, in this elaborate and opulent economy, when end-users order commodities, they typically do not have to stand around and wait for them to be made. Instead most commodity-selling and producing firms fill orders out of stock. And even those who do not—mainly concentrated in construction and producers durables manufacture—usually are not pure jobbers; they maintain invenevories of purchased materials in anticipation of new business.

These generally beneficent, although somewhat unstabilizing, practices require sellers to forecast new orders, and they make mistakes. When they do, their inventories of finished goods and purchased materials serve as the cushions which reconcile different rates of selling and of buying and producing. Add the fact that almost all commodity sellers do, to use Mrs. Mack's happy phrase, have concrete "inventory objectives," add the further fact that

there are speculative motives for varying these objectives away from normal but not without limit, and you have all of the theoretical essentials of the phenomenon Mrs. Mack describes. She describes it well, and does well to emphasize it. My point is simply that much existing inventory cycle theory talks about exactly the same process in very much the same way.

Nor does it seem to me that this new subcycle is empirically very unfamiliar. I remain confused about the average duration which Mrs. Mack ascribes to it, but at one point when discussing her largest collection of series, she speaks of twenty to twenty-four months. This would jibe rather well with what many of us have come to think of as a familiar tempo for inventory swings during the postwar period. At any rate, I do not believe that it could be contended that working forecasters—most of whom do not feel bound to cyclize the outlook but are only concerned to figure out what it is—are guilty of any systematic oversight of the swings in corrective buying which Mrs. Mack identifies. In short, my impression is that, empirically as well as theoretically, the subcycle is clearly novel only when viewed within the National Bureau's own specialized frame of reference.

If there were more time I should like, on a somewhat more fundamental plane, to question the appropriateness of the whole idea of cycles in this field of corrective buying, whether one calls them subcycles or inventory cycles. It is true that the mechanism which Mrs. Mack and others describe is self-reversing when it is isolated from excgenous changes in the economy. And it is true that we always take pains to emphasize that such cycles are not periodic. Nevertheless, the cycle concept retains the connotation of necessary reversibility, and this, as a practical matter, often is inapporpriate for an economy where exogenous factors do change. Specifically, in the case of the inventory or subcycle model, an independent shift in sales—thanks, for example, to a change in government spending—can wholly vindicate previous errors in business procurement and shift the economy from the first half of one inventory cycle to the first half of a new cycle without the first cycle's ever having been completed.

There are other comments I should like to address to Mrs. Mack's very stimulating paper, including a plea to her not to be so critical of her own model. Its implication (which is that as long as businessmen continue to be imperfect forecasters of their own sales, economic forecasters will have to settle for less than perfection) seems to me altogether reasonable. But now on to Mr. Reierson.

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Here I find much more to agree with than to dispute. Mr. Reierson, it seems to me, has done a good and comprehensive job of diagnosing the nature of the current inflationary process and of indicating why it is more likely than unlikely to continue.

I would vary the emphasis at a number of points. For instance, I think the fact that public policy, including Federal Reserve policy, must pursue the twin price stability and high employment objectives and cannot single-mindedly seek the former and might have been kept closer to the forefront of his analysis.

Similarly in the earlier portion of his remarks, where Mr. Reierson was

dealing with the sources of inflationary pressures, it seemed to me that his treatment of investment spending was one-sided, since he mentioned only its immediate stimulating effect upon demand. However, later he balanced things up by emphasizing plant and equipment spending's lagged impact upon capacity and productivity, which, of course, is anti-inflationary. I hate to see this overlooked even for a moment, since it seems to me that the one really effective and available source of resistance to the kind of secular inflationary bias Mr. Reierson fears may be rapid productivity gains and vigorous capacity expansion.

Also there is some little one-sidedness, I suspect, in Mr. Reierson's treatment of wage bargaining, industrial pricing, and productivity gains. We have, by a somewhat accidental combination of historical circumstances, evolved a very complex but powerful cost-price escalating mechanism in the economy. Mr. Reierson sounds a little as though he assigns all of the original sin in his mechanism to labor's demands for wage increases in excess of productivity gains. Actually I doubt that he does. At any rate, my own guess is that present industrial corporate pricing policies (which incidentally, viewed by themselves, look just as reasonable as cost-of-living escalators) are at least as powerful contributors to the process as are the wage demands.

More or less in this connection, I should like to put on the record three points with which I suspect Mr. Reierson agrees but about which I think some of his remarks might be misleading. First, for wage rates generally to rise as fast as national productivity gains, thereby forcing price rises in industries with lower-than-average productivity gains, would not be inconsistent with price-level stability if there were price reductions in industries with above-average productivity gains. Second, wage rates which rise at the same percentage rate as productivity do not encroach on the other income shares. Third, even when money wage rates rise faster than productivity they do not necessarily encroach on the other income shares if prices also rise. The obverse of this last point, which I am sure is agreeable to Mr. Reierson, is that evidence that labor's share of the national income has not risen is no evidence at all that money wage increases have not been in excess of productivity gains or that money wage demands have not been one of the prime movers of the cost-price escalator.

These and other points that might be raised about Mr. Reierson's analysis, however, are subordinate to what I take to be its main finding; namely, that the kind of price inflation which the economy is currently experiencing is not chiefly of the classical, inflationary-gap sort in which there is a clear or major excess of current demand over current supply at existing prices. Rather it is an inflation partly, at least, rooted in the pricing practices—including factor-pricing practices—which have become characteristic of the economy whenever it is anywhere in the near vicinity of full employment. There must, of course, be sufficient demand to justify these so-called "cost-push price" increases. But all that seems necessary in this respect is a supply of credit not so rigidly restricted as to be both politically infeasible and inconsistent with full employment.

As Mr. Reierson says, the inflationary bias which this situation seems to

promise for the future may not be forthcoming. It may be that productivity growth will be sufficiently vigorous to provide a full offset. But he doubts this and so do I—particularly in view of the spreading expectations of secular inflation that he reports.

In fact, I am sufficiently persuaded by his analysis so that I am dissatisfied with the policy conclusions he draws from it. For if we should be plagued in the future by the kind of cost-escalating inflation Reierson describes and if it should become increasingly serious, fiscal and monetary policies, it seems to me, will not be adequate or appropriate instruments for dealing with it. Briefly this is because such policies use instruments which operate upon demand, whereas the root problem will lie, once again, in pricing practices, or, if you will, in the shape of the aggregate supply function.

We may be forced to consider policies designed to achieve reforms in wage and price-making practices themselves. This is a very sticky area and most of us shy away from it. We abhor the detailed interventions into private decision making that it seems to suggest; and we find little or nothing in the way of fruitful precedent in our regulatory experience in this country. Yet if Mr. Reierson's tentative forecast is correct, this unpleasant policy problem is one that, simply as a matter of preparedness, needs much more sober attention than it is presently getting.

T. M. Stanback, Jr.: In discussing the paper on subcycles it is important to recognize that this research is a sequel to Dr. Mack's analysis of the shoe, leather, hide sequence. This earlier study makes a number of solid points: short-term fluctuations (subcycles) are clearly in evidence; these fluctuations extend through the vertical sequence with roughly coincident timing; swings in consumer demand are passed back with considerable amplification. Thus we may begin with the proposition that subcycles are firmly established for at least one industrial complex.

Dr. Mack now seeks to determine whether or not subcycles are a generalized phenomenon, and if so, what are their characteristics, their significance, and their explanation.

In assessing the significance of the conformity measures in Tables 2, 3, and 4, one reservation should be mentioned. Certain of the conformity measures are, I believe, open to criticism. If we were to select for testing a number of series which conformed perfectly to reference business cycles but which had no subcyclical or random fluctuations and if we measured the number of months which were in phase with reference subcycles, we would get an over-all rating well above 50 per cent simply because paraphases of the reference subcycle are much longer than counterphases. This bias would not, however, apply to the measure for counterphase alone which would give a zero rating. The same test series would show positive over-all conformity ratings using the National Bureau conformity measure, but ratings for counterphases alone would be -100.

Thus the tests which are particularly interesting are the average deviation from mean timing and the conformity tests for counterphases. The over-all measures appear to have a positive bias. Dr. Mack has warned us that the tests for counterphases are the critical ones, but I think it is important to spell out the limitation of the other measures.

Even with this restriction, however, the results are impressive. Conformity for counterphases is very high for the general manufacturing series and for most of the other series well above a level which it would seem could be explained by chance.

There is one count, however, on which some criticism can be made. We are told that selection of reference subcycles was determined in part by the wish to be sure that at least three of the four categories studied—general output, capital output, prices, finance—showed the movement. The logic of this approach is clear: unless the cycle is broadly diffused it cannot be said to be a phenomenon to which the economy at large is subject. Yet such a chronology may rob us of the opportunity to study subcycles which might be diffused through a considerable part but not all of the economy. The study of subcycles is, I think, of major significance because of the light which it may shed on the nature of market behavior and on the cumulative forces inherent in the business cycle. If a phase of the business cycle is interrupted in an important way by a countercycle clearly evidenced in a number of industries but not found in all economic categories, this is important and deserves analysis.

Another comment may be made in connection with this point. The very fact that reference cycles have been marked with a view to insuring that all or most economic categories are represented may serve to bias the results. If additional references were included it is quite possible that some series that make a good showing on the present basis might drop in their conformity ranking while others would rise.

In treating subcycles as fluctuations of alternating over- and underbuying of materials, Dr. Mack directs our attention away from traditional considerations of investment, consumption-saving, and the banking system to certain transmitting mechanisms and perverse characteristics of consumer and producer goods markets. This emphasis is long overdue.

There is no doubt that such tendencies exist in certain industries. For example, Bert G. Hickman in an unpublished dissertation has noted that nine cycles occurred in cotton textiles during the interwar period, and H. William Knodel in a recent article in the *Analysts Journal* has marked four during the period from 1946 to 1954. I have had occasion to examine in detail the market reports and price and production data for cotton cloth from 1946 to 1952 and find certain characteristics well established:

- 1. Market activity alternates between speculative buying movements during which order periods are greatly extended, and recessionary periods during which orders are placed on a hand-to-mouth basis.
- 2. There is a perfect coincidence in the timing of fluctuations in unfilled orders, inverted unsold mill stocks, and gray goods mill margins.
- 3. There is an apparent tendency for each buying movement to "feed on itself." Buyers appear to mistake inventory build-up demand for an indi-

cation of increased end-use demand and adjust orders and inventory position accordingly.

- 4. There appears to be a cost hazard for those who do not participate in buying movements (i.e., those who would gamble that they can buy hand to mouth during a buying movement), this hazard being the risk of being caught short of a full line of merchandise and thereby damaging customer relations.
- 5. There is an effective transmission of the cycle from segments of the industry in which markets are competitive and prices flexible and speculative to those in which markets are imperfect and prices administered and inflexible, so that clear cyclical sensitivity is manifest throughout the cotton textile complex.

Dr. Mack has provided us with suggestions as to how such instability occurs and with evidence as to where it occurs. Further, she has advanced a tentative theory of a self-generating subcycle.

Her theory of a self-generating cycle cannot be regarded as a final statement for two reasons. In the first place, it rests upon the assumption of a closed model which depends upon instantaneous consumption reaction to income changes for its substantiation. Such an assumption requires more empirical verification than can at the moment be offered. Secondly, the theory is put forth verbally and in a fashion which makes it impossible to establish whether or not the oscillations are regenerative. It is one thing to say that an expansion once sparked tends to be cumulative, has its upper limits, and will be followed by a corrective and cumulative recession which also has its limits. It is quite another thing to demonstrate that this sequence will be followed by another and still another without tendencies to gravitate toward equilibrium or without benefit from external shock. It should be possible, however, to build a mathematical model based on the assumptions stated. With such a model we could assess more adequately the validity of the theory.

But this is of small moment. Dr. Mack's major theoretical contribution does not rest on her tentatively advanced theory but rather on a number of suggestions which concern the nature of the market mechanism and which point to inherent characteristics making for instability.

Her principal suggestions are as follows: First, the notion of an instantaneous transmission of demand stimulus throughout the vertical production-marketing sequence. Second, a description of buying behavior which relates both to rates of change in sales and to changing market prospects and which results in a magnification of the original stimulus. Third, a statement of a variety of conditions which facilitate the horizontal transmission of cyclical forces. Finally, certain suggestions as to the conditions which place limits on expansions and recessions and ultimately bring about a reversal of market tendencies.

The notion of instantaneous vertical transmission of changes in demand was a startling finding of the shoe, leather, hide study. A similar examination of data for other vertical sequences has not yet been possible, and we cannot be sure how far we can generalize about this tendency. It should be noted,

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however, that the high and essentially lagless conformity which is shown by a number of series obviously representing a variety of stages in the vertical sequence seems to bear out the contention that impulses are transmitted swiftly both vertically and horizontally.

The concept of buyer action which transmits changes in sales backward with amplification is also a product of the shoe, leather, hide study. These ideas are highly suggestive and deserve further investigation. The empirical findings presented today as to where subcyclical fluctuations are strong relative to cyclical fluctuations seem to substantiate this explanation.

Regarding horizontal transmission, it is doubtful that much can be proved as to exactly how cyclical forces spread. The most promising approach would seem to be a continuation of the comparison of subcycle timing in various activities making use of the richer data for the postwar period.

Finally, concerning Dr. Mack's ideas regarding the limits to market movements and the reciprocating mechanisms, more has been said in her book and certain conference papers than has been included here. The points made are convincing and should lend themselves to confirmation. It would be interesting, for example, to analyze stock on hand and on order positions for a number of industries at the culmination of subcycle phases or to determine how frequently buying movements are brought to a close at or near peaks in seasonal activity.

In closing, I would like to state my appreciation of two qualities found in Ruth Mack's work—qualities which characterize this study and which make it an important contribution. The first is the quality of boldness. I am not sure that there are any other investigators who would have had the courage or perseverance to make their way through the scores of time series and to mark and analyze the hundreds of fluctuations which the series contain. The second is the quality of rich empiricism which stands behind her theorizing. Dr. Mack is not an austere thinker; she is extremely aware of the complexity of market influences and is seldom content to attribute such forces to some single cause. Her suggestions as to the nature of market mechanisms constitute a veritable happy hunting ground of hypotheses the careful examination of which gives promise of providing a much more complete understanding of the nature of cyclical disturbances.

# GOVERNMENT TAXING AND SPENDING: DEVELOPMENTS OF THE LAST DECADES AND CURRENT PROBLEMS

## SOME DISTINGUISHING CHARACTERISTICS OF THE BRITISH, FRENCH, AND UNITED STATES PUBLIC FINANCE SYSTEMS

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The public finance systems of France, the United Kingdom, and the United States differ in size, relative to their respective economies, differ still more in patterns of expenditure, and most of all in their systems of taxation.

The task performed by the public finance system is relatively greater in the United Kingdom and France than in the United States. This is so partly because government expenditures (national and local), including transfer payments, are a larger proportion of gross national product at market prices in those two countries than in the United States. The proportion perhaps exceeds a third in France, is a little less than a third in the United Kingdom, and a little more than a fourth in the United States.1 In part, the task is greater because the national income per person is lower.

The expenditure patterns of the three countries differ chiefly in military outlays and social security payments. Military expenditures account for a larger proportion of national government expenditure in the United States-about three-fifths-than in the United Kingdom or France, where they take about a third of the national budget.2

Government expenditure is highly concentrated at the national level in France, less so in the United Kingdom, and still less in the United States. But if transfer expenditures are excluded from the calculation, only expenditures on goods and services being taken into account, there is little difference between the United Kingdom and the United States. In 1955, local units in the United Kingdom accounted for 36

p. 576.

<sup>&</sup>lt;sup>1</sup>See: Survey of Current Business (U. S. Department of Commerce), July, 1956, p. 8, Table 1, and p. 15, Table 9; National Income and Expenditure (Central Statistical Office, London, 1956), pp. 1 and 42, Tables 1 and 42; Henry Laufenburger, Théorie Économique et Psychologique des Finances Publiques (1956), p. 31.

<sup>2</sup>Treasury Bulletin (U. S. Treasury Dept.), October, 1956, p. 4; National Income and Expenditure (1956), pp. 35-36, Tables 37, 38, and pp. 40-42, Table 42 (for 1955); Paul Coulbois, "Le budget, la trésorerie, la dette publique," Revue d'Économie Politique, 1956,

per cent of total government expenditures on goods and services and gross fixed capital formation: in the United States (1955), for 39 per cent (state and local together). Nearly two-fifths of the local expenditure in the United Kingdom was on capital account.3

We turn now to differences in the three tax structures, with emphasis on the British system.4

## I. Differences in Tax Structure

The British tax system, on the national level, depends on the income tax, profits taxes, and death duties for somewhat less than half its current revenue (44 per cent), and if we count social security taxes as another form of direct tax, 55 per cent of national revenue comes from direct taxation.<sup>5</sup> This is a considerably smaller proportion than the United States federal government obtains from the same sources (83 per cent).6 France, toward the other extreme, depends on income and death and gift taxation for only a third of the current revenue of the national government.7

The broad pattern of British taxation is about the same now as it was in 1938. In that earlier year, income, profits, and death taxes accounted for 46 per cent of total national revenue; social security contributions, for 11 per cent; and indirect taxes and income from property, for 39 per cent: virtually the same percentages as those for 1954.<sup>6</sup> Indeed, the stability of the British tax structure extends back to 1922; from that year to 1956, the percentage of total national tax revenue supplied by customs and excises held within a range of 34 per cent to 44 per cent. Within this period the trend has been upwards; every year before 1933 the percentage supplied by customs and excises was below 40; every year since 1948 it has been over 40.9 Professor

The present writer has attempted an appraisal of the French tax system in "Taxation in France," National Tax Journal, December, 1955.

\*National Income and Expenditure (1956: data for 1955), p. 34, Table 37.

\*National Income and Expenditure (1956: data for 1955), p. 34, Table 37.

\*In billions of dollars, fiscal 1956; income and profits taxes, 56.6; employment (social security) taxes, 7.3; estate and gift taxes, 1.2; total budget receipts, 78.8. Treasury Bulletin, October, 1956, p. 2.

\*For 1954, estimated from Paul Coulbois, "Le budget, la Trésorerie, la dette publique, en 1955," Revue d'Économie Politique, 1956, Table VII, p. 588. Totals, in billions of francs: taxes on incomes and profits, 951; total taxes plus miscellaneous current receipts, 2,929. Practically all the social security contributions fall outside the budget, in France, being collected by quasi-private organizations. The percentage of national tax revenue (excluding such contributions) raised by contributions directes has been fairly steady in recent years: 1952, 33 per cent. 1953, 37 per cent. 1954, 36 per cent. 1955, 35 per cent. recent years: 1952, 33 per cent; 1953, 37 per cent; 1954, 36 per cent; 1955, 35 per cent. Ibid., p. 590.

<sup>8</sup> Alan T. Peacock, "Das Finanz- und Steuersystem Grossbritanniens," Handbuch der Finanzwissenschaft, 22 Lfg., Bd. III, 1956 (W. Gerloff and F. Neumark, eds.), p. 215, Table 1.

Percentages read off diagram at p. 24, Forty-sixth Report of H. M. Customs and Excise for the Year Ended 31st March, 1955.

<sup>&</sup>lt;sup>8</sup> Survey of Current Business, July, 1956, p. 15, Table 9; National Income and Expenditure (1956), pp. 35, 36, 38, 39, Tables 37, 38, 40, 41.

Peacock has remarked that the stability of the role of indirect taxation in the United Kingdom during the war and postwar period is astonishing in view of the fact that the Labour Party was in power from 1945 to 1951 (op. cit., page 214).

Among the several indirect taxes in Britain, however, changes have occurred. The tobacco tax has risen sharply in importance: from 8 per cent of total national current revenue in 1938 to 13 per cent in 1954 (Peacock, op. cit., page 215, Table 1). Balance-of-payment difficulties appear to have been a motivating factor: "... we were literally smoking the American loan away. . . . 'The whole total of our exports to the United States . . . barely exceeds, in value, our consumption of American tobacco.' "10 Otherwise, the emphasis on tobacco taxation is difficult to account for, under a government not committed to regressive taxation. Tobacco taxation in Great Britain vields a good deal more than the liquor taxes; the reverse is true in the United States.11 The British tobacco tax is more than three times the factor cost of that article; the British liquor tax, slightly less than the factor cost (Peacock, op. cit., page 216, Table 2).

Britain's inclination to depend on the traditional excises is strikingly exemplified by the beer tax. Here is a tax on the working man's drink; and although beer has recently "penetrated to the middle classes and the well-to-do, both among men and women, almost as far as it had done in the working classes,"12 by far the larger part is consumed by the working class. Moreover, consumption is quite unevenly distributed: a recent survey found that "one in three men have made beer a regular habit (drinking it more than once a week), rather more than one in three drink it occasionally (once a week or less often), and rather less than one in three not at all." (Idem, citing a Hulton Readership Survey.) Finally, the industry has been a declining one (consumption dropped from 36 million bulk barrels in 1900 to 25 million in 1953, idem). In the face of these facts, only the strongest of sumptuary necessities could overcome the ordinary canons of equity in taxation. Yet the rate of tax "has risen from 1/4 d. per pint of beer of average gravity in 1900 to  $2\frac{1}{2}$  d. in 1938 and to  $8\frac{1}{2}$  d. in 1953. about half the retail price; it now ranges from  $6\frac{1}{2}$  d. to over 1 s. per pint according to gravity. . . ." (Ibid., page 37.)

<sup>&</sup>lt;sup>10</sup> Hugh Dalton, writing of his policy when Chancellor of the Exchequer, in 1947, in his *Principles of Public Finance* (4th ed.), p. 242.

<sup>11</sup> Britain, fiscal 1955, million pounds: Beer, wine and spirits, 337; tooacco, 650. U.S.A. in fiscal 1956, million dollars: 2,921 and 1,613, respectively. If the U.S.A. total budget receipts less tax refunds, 75 billion dollars in fiscal 1956, had been met 13 per cent by tobacco taxation, the latter would have produced 10 billion, not 1.6 billion. *Forty-sixth Report of Customs and Excise*, p. 23, Table 2; U. S. Treasury Bulletin, October, 1956,

p. 44.
<sup>12</sup> Arthur Seldon, "The British Brewing Industry," Lloyds Bank Review, October, 1953. p. 39.

The French national government, relying even more than do the British on indirect taxation, depends chiefly on a form of general sales taxation rather than on a few excises. The British type of general sales taxation—the purchase tax (levied at the wholesale stage) supplies only 6 per cent of national government revenue, less than half the yield of the tobacco tax (Peacock, op. cit., page 215). The French value-added tax, together with the remains of a turnover tax system, accounts for 42 per cent of the national government revenue (Coulbois, op. cit., page 588, Table VIII). The British system does give a way out for the needy family that has adequate strength of character. Taxes on foodstuffs in Britain were exceeded by subsidies on foodstuffs (in 1954): market price 100, factor cost, 106. Indirect taxes on clothing were only 4 per cent of factor cost.<sup>18</sup> In France, only a few of the most essential foods escape the indirect tax net and almost no articles of clothing. Dwelling accommodation, on the other hand, is probably taxed more heavily in the United States and Great Britain than in France, for France has no strong independent system of local taxation and does not utilize real estate as a local tax base to the degree common in the other two countries.

### II. Particular Forces Influencing the Several Tax Structures

Each of the three tax systems has been strongly influenced by forces peculiar to the respective countries.

The United Kingdom revenue system reflects a profound, perhaps an exaggerated, respect for precedent and tradition, and it reflects also the compact, insular geographic position of the British Isles.

In France, the lessons learned in preceding centuries of taxation have stimulated change rather than being, as in Great Britain, a source of stability. Two other factors peculiar to France (among our three countries) are the significant role of agriculture and the small artisan and the series of shattering invasions and occupations by Germany over the past eighty years.

In the United States the distinctive forces include federalism and a passion for tax minimization that reaches a pitch not equaled, I think, elsewhere. Let us see what aspects of the three tax systems may be traced to these several forces.

United Kingdom. In Britain, the degree to which the past controls the present appears remarkable to the American observer. The income tax law of the Napoleonic Wars, as it stood when repealed in 1816,

<sup>&</sup>lt;sup>18</sup> But in 1948 the factor cost of foodstuffs was 122; market price, 100. For all consumers goods together, indirect taxation, in 1954, equaled 21 per cent of factor costs, and were partly offset by subsidies equal to 4 per cent of factor costs. Peacock, op. cit., p. 216, Table 2.

was re-enacted virtually without change in 1842; and the income tax of 1956 reflects in many features that of 1842. For example: the schedular system, whereby the British taxpayer segregates his items of income under several headings (he does not compute his own tax), may assist somewhat in administration, but it would probably not obtain today but for the outcry in 1803 against the invasion of the taxpayer's privacy inherent in the initial income tax of 1799, which had required use of a return form in which incomes from all sources were added into one grand total—a total that might reach the eves of unauthorized persons (butchers were said to be wrapping meat in old income tax returns!). The 1803 answer was to allow the taxpaver instead to submit a series of schedules of the various parts of his income on separate sheets of paper.14 Today, the information is still subdivided by schedules, although they do not, as they do in France, in practice if not in theory, attract different rates of taxation, aside from the limited relief granted to earned income.

Again, the long period of low-rate proportional taxation in Great Britain (1799-1815, 1842-1909) permitted a certain crudeness in definitions of income, as in the treatment of life annuities and the denial of depreciation accounting, that continued for decades after the advent of progressivity and high rates. The English income tax system and the death tax too are still struggling to free themselves from the web of the past, and this is not easy to do, if we are to judge by the predominately conservative tone of the 1955 majority report of the Royal Commission on the Taxation of Profits and Income. A ferment is brewing, however; witness the bold attack on much of the majority's position by the dissenting group of three, led by Kaldor.

The economic and physical geography of Britain facilitate the enforcement of taxes at high rates on liquor and tobacco. To be sure, the lengthy coast line invites smuggling by sea, and Walpole's troubles with the excises in the eighteenth century are echoed in the passages of Adam Smith and Ricardo that expose the economic waste of smuggling. The decisive factors, however, favor the United Kingdom, in comparison with the United States and France. The soil and climate are not suitable for cultivation of the vine or the tobacco plant (though they are for the raw materials of beer and spirits), and in any event Britain's geographical compactness makes internal policing easier. But even the geographic features and the balance-of-payments argument alluded to above seem inadequate to account for the degree to which the United Kingdom makes use of the two traditional excises. Perhaps

<sup>&</sup>lt;sup>14</sup> Stephen Dowell, A History of Taxation and Taxes in England from the Earliest Times to the Year 1885 (London: Longmans, Green, 1888), Vol. III, p. 99; E. R. A. Seligman, The Income Tax, p. 90.

another factor is the legacy left by eighteenth-century concepts of liquor and tobacco as truly luxuries of the well-to-do; hence more suitable objects of taxation than necessaries, for necessaries, it was believed, would pass a tax burden to profits through a compensating rise in wages. 15 (The taxation of spirits also invoked the sumptuary principle to a high degree, starting with the attempts in the early eighteenth century to place gin-and later, "Parliament Brandy"-out of the reach of the laboring poor.) Most striking is a seeming lack of interest in certain issues of tax equity that preoccupy so many American students of taxation: Why should government expenditure be defrayed disproportionately by those who smoke and, for that matter, by those who drink? Even if everyone smoked, an equity issue would remain, for the burden of the tobacco tax is heavily weighted against the poor.

France. When we turn to France, we see that dissatisfaction with the past rather than attachment to it has much to do with the present pattern of taxation. Direct, personal taxation was an important part of the ancien régime. Direct, personal taxation can be finely shaped to equitable ends, to a degree impossible with indirect taxes—and also to inequitable ends. The Court and the tax farmers of the eighteenth century were masters in the art of personal discrimination. The Revolution's tax philosophy was equal treatment for all, to be achieved largely by objective, easily observable indicators of wealth or income or consumption. Practice in the use of such indexes, however, develops administrative skills that are useful in generalized forms of indirect tax, and by the third decade of the twentieth century France had evolved the general sales tax. So, too, had Germany, but while the German umsatzsteuer remained virtually unaltered (except for rate changes) during the next thirty years. France continued to refine the system, moving first to a tax limited (in general) to the value of the finished product as it emerged from the manufacturing stage, and, recently, to a value-added tax that extends down through the wholesale sector. France now possesses by far the most refined and economically neutral type of general indirect tax in the Western world. The French value-added tax supplies about one-third of national government revenues.16 There is less reliance on heavy excises in France than in Great Britain, even taking into account the government's tobacco monopoly. Meanwhile the personal income tax, though endowed with modern instruments of equity like income splitting, has

<sup>&</sup>lt;sup>18</sup> See William Kennedy, English Texation, 1640-1799, pp. 107-112, 122-123, and F.

Shehab, Progressive Taxation, Chap. II.

Shehab, Progressive Taxation, Chap. III.

Coulbois, op. cit., p. 588, Table VIII; John F. Due, "Sales Taxation in Western Europe, Part II," National Tax Journal, September, 1955, p. 319.

been disintegrating into an asymetrical system of schedular taxes with complicating differences in rates and exemptions and an intrusion of impersonality (wages are now subject to a flat tax collected at source with no allowance for family status, in lieu of the normal tax on personal income), topped by a surtax that is stiff on paper and limp in compliance if not enforcement.

The importance of agriculture in France and the fostering of small business, or, rather, tiny business, explain in part the secondary role of income taxation there. And agriculture puts a brake on liquor taxation, for the *bouilleurs de cru*—farm distillers—are politically powerful and administratively refractory.

Finally, three wars and three occupations, with consequent destruction of property and lessons in defying authority, set the stage for inflation and tax evasion. The sales tax has ridden the wave of inflation much better than the income tax; it is subject to less distortion than its rival by a rising price level.

United States. In the United States, competition for particular tax sources between the federal government and the states has, paradoxically, limited the use of certain taxes to levels well below those prevailing in the United Kingdom and France. Those taxes to which the states have successfully asserted a preferred, if not exclusive, claim or even a roughly equal claim (e.g., retail sales tax, cigarette tax, motor fuel tax) are utilized less intensively than they would have been if the federal government had won out decisively. They are used less intensively, even when federal and state levies are considered cumulatively, than they are under a highly centralized governmental system such as that of France, or by that of a country, like Britain, which possesses no strong units as large as our states. This is so because the restraining force of competition for taxpayers among the several states induces state governments to move cautiously in raising the rates of a retail sales tax or a motor fuel tax; and they do not need to move daringly, since they are not responsible for financing armaments. Had the federal government enacted a retail sales tax in the twenties leaving the income tax largely to the states, we should now have a sales tax rate of at least 10 per cent and a much milder income tax system. If highway financing in the United States had been chiefly a federal responsibility, from the beginning, the motor fuel tax would have become primarily, perhaps wholly, a federal levy; and, without boundary-line competition to fear, the federal government would have raised the rate to a point where the tax would have exceeded total expenditures on all highways. The mild use of tobacco taxation in the United States, compared with what we see in the other two countries, is only partly attributable to the accident that a long-time powerful chair-

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man of the Ways and Means Committee came from North Carolina; it is traceable chiefly to the unwillingness of a locally-minded Congress to hamper state taxation of the same base. As to the income tax, both historical accident and technical factors of administration and economics have allowed the federal government to assert pre-eminance in this field.

The other factor noted earlier—the passion for playing the legal game of tax avoidance right up to the limit, the addiction to taxmanship—is of course not wholly peculiar to the United States, but it seems to be indulged in here to a degree not observable in Britain. where a more discreet approach characterizes both taxpayer and tax administrator, or in France, where temperament and mores combine to stimulate outright evasion. To be sure, these differences are only in degree: the point is not so much that the French taxpaver evades or that the Britisher eludes taxation more than the American, as that the minimizing art in the United States has been carried to a degree of perfection and permeates the body of taxpayers to an extent not apparent abroad. Britain and France have no close rivals to our dollar handbooks on how to make out with your federal income tax return, nor are the wealthy taxpavers across the Atlantic offered quite so much in the way of published tax services and superbly trained minimizers as are the fortunate upper-bracket Americans. The spirit of avoidance extends into Congress itself, where it is reinforced by strong attachment to local interests. Differences in economic interests from one state to another or one Congressional district to another facilitate a swapping of tax reliefs or loopholes (depending on your point of view). In Britain, party discipline and a more compact country do not encourage this kind of tax particularism. France, in this respect, tends more to resemble the United States.

# III. Evasion and Avoidance in the Three Countries

Although it seems clear that differences in cultural background and in the tax systems are accompanied by differences in the attitude toward and the extent of tax evasion and tax avoidance, reliable data in this field are few. The following incautious generalizations are scarcely capable of proof. We have no firm data for comparison; neither Britain nor France has developed random sampling to measure the degree and spot the kinds of evasion—the technique known in the United States as audit control and utilized effectively by the federal government and the state of California. Nor do there exist in England and France, to my knowledge, computations as highly developed as ours indicating the nature and amount of gap between the tax base as shown by returns filed and the same tax base as indicated by national income

figures, adjusted. The data published in France from time to time by official sources purporting to show the percentages of evasion of each of the major taxes (they are high) seem to be not much more than guesswork. Incidentally, we may know more after the 1957 meeting of the International Institute of Public Finance in Vienna, tax evasion and avoidance being the topic selected for discussion.

In France tax evasion is somewhat more openly attempted and tolerated to a somewhat greater degree by the taxpayer's social group -at no matter what income level—even though it is recognized that the unsuccessful or the honest will likely be called upon to make up the consequent revenue shortage. The government occasionally bows to the use of force by taxpayers, as it did in 1954 when two of the most forward-looking tax administrators that have emerged in France in recent years were dismissed in appeasement of the shopkeeper Poujade and his band of tax resisters.17

In Britain, outright tax evasion is generally considered in bad taste; but there are more subtle influences—more powerful in their way than in France or perhaps even than in the United States—which may give cause for uneasiness. There has existed in Britain what seems to have been an exaggerated respect, even veneration, for the Board of Inland Revenue and for its opinions on any proposed measure of taxation. If the Board considered a suggested reform to be administratively impracticable or even troublesome, that was usually the last heard of it. The Board deserves commendation, all will agree, but the inclination to accept its views without dispute is the more strange in that neither it nor the Treasury possesses a permanent tax research unit (compare the Office of Tax Research and the Office of Legislative Counsel in the United States Treasury) by which the purely administrative considerations might be subject to some devaluation in view of equity and economic goals. Great dependence, too, is placed by the Board on the integrity and skill of the accounting firms that represent large companies and even of the taxpayers themselves; the enforcement staff of the Board, relative to the size of its job, is perhaps not quite adequate. 18 No doubt, the integrity and skill do exist, to a degree perhaps unmatched elsewhere; but can the pressures generated by a modern income tax system at today's rates be kept within bounds by such an approach?

As in the United States, tax officials at the top level often move to important posts with large business firms when they leave government

<sup>&</sup>lt;sup>17</sup> For an account of "le Mouvement Poujade," see J.-G. Mérigot, "Fiscalité et politique: le Mouvement Poujade," Revue de Science Financière, July-September, 1956.

<sup>18</sup> Cf. the data on recruitment in the Report of the Royal Commission on the Taxation of Profits and Income, p. 329. The staff of the Department numbered 47,000 in 1949. Wyn Griffith, A Hundred Years: The Board of Inland Revenue, 1849-1949, p. 46.

service through retirement or resignation.<sup>19</sup> The line between mutual trust and identification of interests is a difficult one to draw at best. When it is crossed, the result is an oversensitive concern lest taxpayers be unduly troubled by administrative safeguards. The tax enforcing body, in place of asserting leadership in devising and pressing for the adoption of new measures that will check evasion, if not avoidance, must be persuaded by others. The recent Royal Commission Report chides the Inland Revenue, gently to be sure, for having been led "by a laudable anxiety to protect the subject from any needless official imposition to over-estimate the extent to which certain simple requirements [for the filing of the returns] could fairly be resented by the general public."<sup>20</sup>

With few exceptions, these problems have not been posed in the public finance literature of Britain; there has been little probing for possible inadequacies in administration or compliance:21 contrast the flood of self-criticism, much of it alas quite justified, in France and United States. The two brief chapters in the Royal Commission Report that deal with avoidance and evasion do not evidence much concern, other than that aroused by the "many small traders" who "fail to make an accurate return of their true profits." (Final Report, page 320.) The minority report, while dealing at length with avoidance and loopholes, does not touch on evasion. The atmosphere may be changing, however. Recent work by Wheatcroft and information to be found in Britain's new, and first, scholarly journal of taxation, under his editorship (British Tax Review) clearly indicate that tax avoidance is rapidly approaching the degree of refinement now common in the United States. The extent of outright evasion, however, remains an almost dormant issue. An illustration of the degree to which Britain has depended thus far on taxpayer good will and tax administrators' skills is strikingly illustrated by the fact that the Royal Commission must address itself to the question of whether the law should be

<sup>&</sup>lt;sup>10</sup> To the Board, this is a cause for reassurance, not concern. "Whatever might be the current opinion, right or wrong, of civil servants elsewhere and their capabilities, the world outside the [Revenue] Service admitted that if you wanted someone to tackle a job with vigour and skill and self-reliance, with a knowledge of people and their ways in commercial life, the Revenue was a training ground in which you might expect to find him. That the world is still of that opinion is shown by the record of achievement of 'Revenue men' who have left us to work elsewhere, and of these, most of us would agree that Lord Stamp, who began as a boy-clerk and became President of the L.M.S. Railway, is the outstanding example." *Ibid.*, p. 42.

outstanding example." Ibid., p. 42.

Royal Commission on the Taxation of Profits and Income, Final Report (H.M.S.O., Cmd. 9474, June, 1955), p. 319.

cmd, 9474, June, 1953, p. 319.

21 "Our backward glance over a century shows that throughout the period the Department has done its work efficiently, according to the standards of the time. That, of course, is no more than one would expect from the Civil Service, but the records also show that it has never ceased to try to make itself more efficient. It has never been complacent: on the contrary, it seems to have lived in a perpetual inquest upon its methods, always trying to improve its technique. . . "Griffith, op. cit., p. 46.

altered so that persons carrying on a profession, trade, or vocation will henceforth be put under statutory duty to keep records of their transactions? (*Idem*.)

The United States has been handicapped in developing its tax system, not only by assiduous avoidance, but by something much more serious: instances of corruption among revenue examining agents, and, in a few spectacular cases, at the topmost levels of tax administration. These latter cases have, however, been publicly exposed and condemned, and the government has tightened its inspection procedures. But neither Great Britain nor France, so far as I am aware, has experienced anything like this disturbing series of income tax scandals of the early fifties, even though the taxpayers who bribed and the few accounting and legal firms that connived may have their analogues in the other countries. Meanwhile, the Internal Revenue Service as a whole makes an increasingly impressive showing as it administers the greatest mass income tax machine known anywhere.

Despite the shortcomings of these three major tax systems, the money comes in; taxpayers by and large comply with rates much higher, for peacetime, than would have been thought practicable before World War II. Each system, though shot through with inconsistencies, does reflect on the whole those particular kinds of consistency that are the peculiar expression of that nation's standards and aspirations.

#### FINANCING EDUCATION

# By Jesse V. Burkhead Syracuse University

The theme of these meetings is institutional and ideological change and its impact on economic theory. This suggests that the subject of of educational finance might be examined by first outlining the formal economic theory which describes the optimum allocation of resources for educational purposes. The next step would be to ascertain whether the theory requires modification in the light of recent structural changes in the economy.

Unfortunately, there is no practicable conceptual framework for analyzing the transfer of resources from the private to the public sector. Marginalism is not helpful here. There is no way of ascertaining the value of the sacrifices which taxpayers endure and no way of ascertaining the value of the benefits obtained from additional government outlay. The recent efforts of Samuelson to formulate a pure theory of public expenditures within the framework of welfare economics provide no criteria for determining whether specific governmental programs should be expanded or contracted. And within the public sector there is no technique for comparing the average or marginal social benefits from different programs.

The absence of a "pure economics" approach to the allocation of resources between the public and the private sector and within the public sector means that the volume and character of specific governmental programs such as national defense, veterans benefits, foreign aid, and education will be determined by and through the political process. In this process measurable economic benefits from specific expenditures are one of the elements shaping the final decision. The views and influence of interest groups, the relationship of a particular governmental program to the orientation of organized political parties, the role of leadership in the formulation of public policy—these are other elements which determine the allocation of resources for public programs. The measurement of economic consequences of public expenditures, it may be hoped, will make up an increasingly important part of the materials for decision making about governmental programs. But since it will always be impossible to calculate monetary benefits from specific programs—education and flood control, for example—decisions about public expenditures will not be made by economists as experts but by administrators and legislators as generalists.

Only in those few cases where government programs are susceptible of isolation and treatment as if they were a market activity is it possible to suggest a more purely economic analysis of resource allocation. Last year at these meetings Heller and Brownlee attempted to examine highway programs in a market framework. No such attempt can be made in the field of education. There is no occasion for the application of market economics here; equality of educational opportunity makes this recourse unavailable.

It is tempting to assert that public expenditures for education are more productive of future national income than any other kind of public expenditure, but it would be impossible to document such an assertion. Education has characteristics that make any attempted measurement of its economic consequences particularly difficult. It is both a consumer good and a producer good—wanted for itself and also as a means to increased income and output. Education is a major factor in national integration in the sense that Myrdal uses the term as equivalent to mobility and motility within the labor force. Education, therefore, will contribute to greater equality in the distribution of income over time. These characteristics make permanently elusive any attempt to measure its economic consequences with precision.

No effort will be made here to survey the financial problems of all levels of education, public and private. Education will be viewed as an area of public finance and attention directed to elementary and secondary education.

## I. The Financial Status of Education

The financial plight of education has been well publicized. The record of accomplishment has received somewhat less attention.

Aggregates and averages can be seriously misleading in this field because of changes in the geographical distribution of expenditures over time. But for what the averages are worth, expenditures for public elementary and secondary education have more than held their own as a percentage of gross national product. For the fiscal year 1929-30 the ratio was 2.2 per cent. In the last fifteen years this ratio has tended to move upwards toward 2.6 per cent. By way of contrast, state and local expenditures on highways have declined as a proportion of gross national product in comparison with expenditure levels in the late twenties.

The financial support which has been accorded to public education is the more impressive in view of the fact that state and local taxes as a whole are a smaller proportion of GNP than during the twenties. In calendar 1929 the ratio was 7.0 per cent. In calendar 1955 it was

6.7 per cent. This means that with state and local taxes declining as a proportion of total economic activity, and with no important federal assistance, an increased proportion of state and local governments' own tax effort has gone to the support of public education.

The demand for elementary and secondary education is the product of three major factors. The first is the size of the school population the numbers between the ages of five and seventeen. The volume of education which will be demanded for this group is then determined by the second and third factors: urbanization and the level of family income. Urbanization gives rise to an increasing number of social and vocational problems and the school program is expected to cope with these. The "enriched curriculum" and "life adjustment courses" inevitably raise ratios of teachers to pupils and thus increase the total demands for financial support. Urbanization also increases school costs by demands for a larger number of school days each year. And the rapidly changing patterns of population in urban areas increase school costs because some school facilities are underutilized at the same time that additional facilities are required elsewhere. Finally, increases in family income and taxable capacity make possible the implementation of the foregoing.

From the total demand for education should be subtracted the amount which is provided by the nonpublic institutions. These latter are of growing importance in recent years and now educate about 12 per cent of the children in school. The comparable percentage in 1939-40 was 9.2 per cent.

The crisis in educational finance is of very recent origin. In the school year 1949-50, public school enrollment in the United States was slightly smaller than in the school year 1929-30. Moreover, public education was strengthened during these years. Teacher-pupil ratios were somewhat lower in 1949-50 than in 1929-30, and price-adjusted expenditure per pupil in average daily attendance increased by two-thirds.

The truly dramatic events have occurred since 1949-50. From that time to the school year 1955-56, enrollments increased by about 25 per cent and school expenditures more than matched the increase in enrollment. Current expenditures increased by more than 60 per cent and capital outlay about doubled. This meant that current expenditure per pupil increased from about \$205 in 1949-50 to an estimated \$280 in 1955-56. But at the same time the long-term trend toward a smaller number of pupils per teacher was reversed; classes today are somewhat larger over the nation than six years ago. There is room for considerable controversy as to the rate of progress in school facilities. Nationwide data on school construction needs are so imperfect

that it is not clear whether we are adding to or reducing the backlog needs for new schools.

Regardless of controversy over past and current accomplishment, there can be no argument about the future: the demand for public education will increase very rapidly. By 1965, public school enrollment is expected to be 42 million—10 million pupils more than in 1955-56. There will be corresponding increases in the demands for teachers and for school buildings.

It is most difficult to translate these educational demands into financial terms that have meaning. The Report of the White House Conference on Education reflects some of the difficulties. For example, responsible estimates of school building construction needs by 1960 vary from 10 billion dollars to 15 billion with some even higher, while estimates of needed classrooms vary from less than 200,000 to nearly half a million.

The year 1965 seems to be the conventional target date for future estimates. The minimum financial estimate is derived by assuming that educational programs and costs per pupil are going to remain at about their present levels but that educational plants will be expanded to meet the increased enrollment. This assumption brings a forecast of increased annual cost of 2.5 billion dollars for current expenses for the 10 million additional pupils plus perhaps another 1.5 billion for interest and amortization on the new structures that must be built. This added to 1955-56 expenditures of about 10 billion dollars would bring 1965 expenditures to 14 billion. Two years ago the National Citizens Commission for the Public Schools forecast a desirable level of annual expenditure for education in 1965 at 19.2 billion. This level of outlay, which would include both current and capital costs, would bring all schools to the educational standards which the best schools now have.

This latter target figure approximates the findings of the White House Conference on Education of a year ago. The Conference Report did not forecast future financial demands with precision but suggested that the number of current dollars spent on elementary and secondary education should be doubled over the next decade.

This may be interpreted to mean an additional 10 billion dollars annually by 1965. This 10 billion is an impressive volume of expenditure even when viewed in relation to the possibilities for economic growth. A conservative growth rate of 2.5 per cent annually in GNP for the next nine years would bring total output to somewhat more than 100 billion dollars above present levels with prices unchanged. A doubling of expenditures for elementary and secondary public education could thus absorb about 10 per cent of the nation's additional output of goods and services in the next nine years. If growth exceeds 2.5

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per cent annually, the task of mobilizing resources for public education will be considerably easier. A 3 per cent growth rate will bring additional GNP of about 125 billion dollars by 1965. The requirements for elementary and secondary public education would then amount to 8 per cent of the increase. If the average postwar growth rate of 3.6 per cent is maintained until 1965 GNP will be 150 billion dollars more than present levels; public education requirements would then be 6.6 per cent of the increase. With 1965 GNP at about 560 billion dollars, expenditures on public elementary and secondary education would amount to about 3.5 per cent of this total; currently the ratio is 2.5 per cent of GNP.

#### II. Education as Government

The ability to tax and spend effectively an additional 10 billion dollars annually by 1965 depends not alone on whether society "decides" to spend this much. It depends, rather, on the organizational effectiveness of this sector of government, its effectiveness in marshaling support for and eventually in administering a vastly expanded program. Public education occupies a peculiar position in government. Most professional educators describe this position as "unique." This uniqueness is derived from the condition that public education is both a state and a local responsibility, that it is subject to a pattern of governance separate from and very often isolated from other public responsibilities, and that, in most communities, it is conducted in an atmosphere which is thought to be free from the influence of organized political parties.

The independence of educational government from other government has been justified on the ground that separation has encouraged and maintained a more rapid professionalization of public school personnel, that separation has brought school government close to affected citizens, and that school government thus has a greater stability than other local government.

The financial aspect of this separate pattern of educational government is fiscal independence. Approximately 85 per cent of school districts in the United States have such independence. Although there are many variations in kind and degree, fiscal independence generally means that school boards are free to determine their own expenditures and set their own tax rates, without supervision or review by other agencies of local government. The limits to fiscal independence are established by a statutory pattern which differs in its provisions from the pattern applying to other local government.

The independence of public education from other governmental functions is not likely to be altered in the foreseeable future. On the

contrary, the trend seems to be in the direction of ever increasing governmental and fiscal freedom. Only in the very large cities is education likely to continue to be administered as at least a partial responsibility of general government.

The consequences of this independence are difficult to analyze with precision. Some general observations are possible, however.

The separation of educational government from general government tends to divide and subdivide governmental responsibility, with a consequent weakening of the whole fabric of state and local government.1 This compartmentalization tends to frustrate the rational allocation of resources among governmental programs; the maximum of rationality is possible only when all government programs at one level are brought into the same channels for decision making.

The removal of public education from politics has tended to remove it from organized political support. In many communities the major political parties have no concern with educational programs, educational finance, or educational politics. School boards are elected on a nonpartisan basis and this very nonpartisanship assures their effective isolation from the channels of political responsibility which shape and mold other governmental policy-local, state, and national. To contend, as have many professional educators, that independent and nonpartisan school boards are nonpolitical in any absolute sense is naïve.2 The school boards and the school administrators simply play a political game with different rules and different procedures.

The separation of educational government from other government has thus meant that nonpartisan political support must be organized in behalf of public education. At the same time, the school boards and school administrators are not always in a position to provide the effective leadership necessary to organize this pattern of support. The evidence is neither recent nor conclusive, but some older studies suggest that fiscal dependence is associated with a more adequate pattern of financial support for public education than fiscal independence.<sup>8</sup>

The separation of educational government from other government becomes particularly troublesome in the growing suburban areas. where there is so often a vacuum in leadership and organization for any public program. In terms of the number of children affected, our most serious deficiencies in educational plant and program are now in the suburbs. Here are the worst overcrowded classrooms and make-

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May, 1956, pp. 474-479.

<sup>a</sup> Paul R. Mort and Walter C. Reusser, *Public School Finance* (McGraw-Hill, 1951), p. 60.

<sup>&</sup>lt;sup>1</sup> Ernest A. Englebert, "Educational Administration and Responsible Government," School & Society, January 19, 1952, pp. 33-36; Eldon L. Johnson, "Coordination: The Viewpoint of the Political Scientist," Annals, November, 1955, pp. 136-142.

2 Robert A. Walker, "Political Science and the Educator," Educational Leadership,

shift facilities. Viewed as a governmental problem in suburban areas, education is in the same state of disorganization as programs for water, sewage disposal, transportation, recreation, and health. These are all metropolitan area problems and solutions should be sought on a metropolitan area basis.

It may be that failures to improve state and local government organizational structures, including the organizational patterns of metropolitan areas and of the public schools, contribute to the preservation of certain values which are important—the kinds of values reflected in such phrases as home rule, citizen participation, grass-roots democracy. If this is the case, we should at least recognize the price we are paying—a price which is measured by the deficiencies in state and local government programs.

#### III. Financial Alternatives

Before examining the possibilities which are available for capturing an additional 10 billion dollars for public education in the next decade, it might be well to look briefly at the two supply factors which are crucial: teachers and classrooms.

To provide the classroom facilities should be relatively easy—whether the required number is 200,000 or 500,000 over the next nine years. At most, assuming that adequate financing can be found, this means additional construction outlay of about 15 billion dollars. This is roughly equivalent to maintaining current school construction rates for another nine years.

The formidable difficulties are encountered in finding enough teachers to staff the classrooms. The Fund for the Advancement of Education has estimated that with replacement and assuming that teacher-pupil ratios remain as they now are, elementary and secondary schools, both public and private, will need to average 190,000 additional teachers each year from now until 1965. This is approximately one-half of the expected number of college graduates in the next nine years—a larger number than can be expected to enter teaching.

Several things will undoubtedly be done to meet the teacher shortage. Salaries will increase in an effort to attract and hold more teachers. Efforts will be made to recruit teachers from the group of married women with college degrees. New teaching techniques will be utilized, with teachers' aides and audio-visual devices. The teacher on one end of a coaxial cable and the student on the other will be commonplace.

An evident inability to employ as many elementary and secondary school teachers as will be needed, given the utilization of existing teaching methods, does not mean that the financial outlook is thereby modified. The more effective utilization of teaching resources may well be as costly as the continuation of existing methods, with existing teacher-pupil ratios.

The possible sources of finance to meet the costs of physical facilities and teachers are, as usual, three: federal, state, and local. However, the overriding significance of a substantial federal aid program, were it to be enacted, means that financial alternatives ought to be examined under only two headings: with federal aid and without federal aid.

In the absence of federal aid, the states and school districts face the necessity of raising an additional 10 billion dollars annually from their own taxable resources by 1965. From 1946 to 1956, the states and school districts increased their annual school revenues by 7 billion dollars. About one-half of this is attributable to price level increases and therefore does not constitute an increase in real tax burdens. The real tax effort that would have to be exerted by states and school districts in the next decade is about three times that which was exerted in the last ten years.

The property tax now provides more than half the support of public elementary and secondary education in the United States. If the school districts are to continue to carry this share, average property taxes for school purposes must double. This could mean an average increase in property tax burdens for all local government purposes of about 50 per cent during a period in which it might be expected that property values and total income would increase between 25 and 35 per cent. This assumes that other local governmental services can be held at their present levels, which is a heroic assumption indeed.

Property tax increases of this magnitude cannot be contemplated with equanimity in the absence of the kinds of fundamental reforms in local financial administration that are so long overdue. Unfortunately, experience does not indicate that the threat of higher tax burdens will produce the necessary reforms in assessment procedure, equalization, and collection. Neither does experience indicate that school officials in 59,000 school districts have the political courage to increase property taxes by the amounts required. Nonproperty taxes administered by school districts do not have the required revenue potential.

State aid is currently providing about 45 per cent of public school revenues. The proportion mounts steadily over time; twenty years ago it was 30 per cent. But the trend toward larger shares from state aid is by no means uniform in all states at all times. Between 1949-50 and 1953-54 there were seventeen states in which the state aid share actually declined.

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In the absence of federal aid, the trend toward increased state support of public education is certain to continue, although it is impossible to forecast its precise extent. If the states were to assume all of the increased revenue burden of 10 billion dollars, this would mean an increase in state tax burdens of 75 per cent. Again, this is to be compared with a possible improvement of from 25 to 35 per cent in the volume of economic activity.

There is no doubt that the states can do much more than they have done to support education, and the opponents of federal aid have made much of this point. Very few states have used their own credit to facilitate borrowing for school construction. The states distribute less than one-half of their school grants-in-aid on an equalization basis; that is, on a basis which gives more to needy districts than to wealthy ones. And where equalization is undertaken, only a few have worked out satisfactory formulae for measuring relative need. Moreover, the states have not revised their tax and debt limits to permit school districts the maximum of fiscal flexibility.

On the other hand, a great many states, in co-operation with local school districts, have made significant advances in recent years. In school district organization, for example, great strides have been made. The number of districts has been cut in half in the past twenty-five years. Much more needs to be done; there are still some 8,600 school districts—about 15 per cent of the total—which operate no schools, and many more districts are too small for efficient performance.

An educational finance program which would call for major reliance on state tax sources faces two serious difficulties. The first is the pattern of relations among the states—a pattern which frequently approaches the anarchy of excessive competition. Tax rates may not be increased by state legislatures except by overcoming the strongest of fears about discouraging a new firm from entering the state or encouraging an existing firm to leave. This atmosphere is not conducive to a vigorous and forthright program of tax increases in behalf of public education.

The second obstacle is that some states are now and will likely remain sufficiently impoverished that substantial improvements in educational programs will be beyond their practical capabilities. Swanson and Griffin, in a careful study of public education in the south, found that thirteen southern states in 1951-52 had expenditures per pupil in average daily attendance of \$165.71 for white children and \$115.56 for Negro children.<sup>4</sup> They then asked whether it would be possible for these states to equalize expenditures for education to the southern

<sup>&</sup>lt;sup>4</sup> Ernest W. Swanson and John A. Griffin, *Public Education in the South* (University of North Carolina Press, 1955).

average of \$166 for white children by 1960, leaving all states above the average at their present levels. Assuming that the southern states continue to spend 3.3 per cent of their state income payments on public education and assuming that income payments increased by 3.2 per cent annually, it was found that by 1960 all southern states except Mississippi would be able to provide for expenditures for education at the level of at least \$166 per pupil. This would be encouraging except for the fact that \$166 per pupil is only about two-thirds of the 1951-52 national average expenditure per pupil. In other words, a substantial tax effort on the part of southern states would still leave their school programs in 1960 far below average national levels of 1951-52. And many southern states are even now taxing more heavily for the support of public education, in relation to their income, than more wealthy northern states.

In addition to income and wealth disparities among the states, there are serious income and wealth disparities within states. Even the most wealthy of states have school districts which are impoverished. The range of taxable capacity among school districts within any one state is substantially greater than the range of taxable capacity among states.

Disparities in rates of population growth among states and within states will further complicate the relationship between taxable capacity and educational needs. If the geographical pattern of population increases continues as it has in recent years, such states as Oklahoma and North Dakota should be able to meet their public education costs over the next decade without great difficulty. But California, Oregon, and Washington, where population increases have been almost explosive, will have very serious financial difficulties.

The fiscal pressures which are building up at the state and school district level will force continued consideration of federal aid to education. Aid for school construction is the first step. The Kelley bill, which failed of passage in the House during the last session, would have provided annual grants of 400 million dollars for four years to aid construction in needy school districts, with other sums for loans. If enacted, this would have made possible an immediate increase in the annual volume of school construction of at least 25 per cent. But school construction, important as it is, does not constitute the whole of the financial problem. If federal aid is to be significant it must extend to current operation. This raises the thorny issue of equalization aid versus flat grants and the even more troublesome matter of the degree of federal control which must accompany any grant for current operating purposes.

Some satisfactory compromises can, of course, be worked out when

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it becomes completely evident that state and school district tax structures cannot meet the demands for additional public education in the next several years. The revenue elasticity of state tax systems appears to be about .3.5 With state tax revenues now at 13.5 billion dollars, an increase of 100 billion of GNP, with tax rates constant, will bring in about 2.5 billion in additional state revenue. The elasticity of school district property taxes is not capable of precise estimation, but the data available would indicate that it may be as high as .75.6 With school property taxes now at 5 billion dollars, this would mean that for each 100 billion of additional GNP, school districts would, on the average, collect about 800 million in additional property tax revenue. The federal revenue structure, however, has an elasticity that appears to approach 1.5.7 This means that an increase of 100 billion dollars in GNP above current tax collection levels of 70 billion should bring in about 17 billion dollars in additional federal revenue.

These vastly differing revenue potentialities mean that states and school districts, if they alone are to bear the increased burden of educational costs in the next several years ahead, must increase their tax rates substantially. But it is at least conceivable that the federal government could devote an additional 10 billion dollars to public education by 1965 without raising tax rates. This fact alone will contribute to the pressure for additional federal aid to education.

Forecasting major structural changes in governmental programs is fraught with hazard. Who could have predicted twenty years ago that peacetime expenditures for military purposes would equal a tenth of the national product? Who would hazard a prediction today that states and school districts, from their own tax resources, will spend twice as much on public education by 1965? This much seems assured: If the states and school districts do succeed in this task, alone and without federal aid, it will be the most important state and local government accomplishment of the century.

<sup>&</sup>lt;sup>8</sup> Harold M. Groves and C. Harry Kahn, "The Stability of State and Local Tax Yields," American Economic Review, March, 1952, pp. 93-95.

<sup>6</sup> Melvin and Anne White, "Impact of Economic Fluctuations on Municipal Finance," National Tax Journal, March, 1954, pp. 23-29; David M. Blank, "The Role of the Real Property Tax in Municipal Finance," National Tax Journal, December, 1954, pp. 319-326.

<sup>7</sup> Richard A. Musgrave and Merton H. Miller, "Built-in Flexibility," American Economic Review, March, 1948, p. 236; Gerhard Colm, "Budget Policy for Economic Growth," Rederal Tax Policy for Economic Growth and Stability (Joint Committee on the Economic Report, 1955), pp. 26-29.

#### DISCUSSION

JOHN F. Due: Admittedly many of the generalizations which Professor Shoup advances would be difficult to verify, but he has offered them merely as observations.

Two points which he notes warrant greater emphasis. First, the fact should be stressed that France collects annually in taxes a sum in excess of one-third of total national income—a ratio substantially greater than that in the United States. Obviously, therefore, evasion cannot be as great as we frequently assume; some persons must be paying their taxes, although admittedly there is substantial evasion on the part of certain groups. Some French observers suggest that French taxpayers' boasts about the amounts of tax which they evade are comparable to American fishermen's claims about the size of the fish which they catch! It is also remarkable that a country as democratic as France is able to utilize so regressive a tax system at such heights. The most important tax, the value-added levy, is roughly equivalent to a 25 per cent wholesale sales tax applying to all commodities, with only very limited exemptions and rate concessions on a few basic foods. This is supplemented by a 2.7 per cent retail sales tax of equally broad coverage. In the Western world, only Brazil approaches France in the severity of regressive taxation.

The other point relates to tax avoidance in England; it is now becoming recognized that avoidance is widespread in that country. Shoup's comments about the inadequacy of the staff of Inland Revenue and its reluctance to require more detailed record keeping and reporting do not apply to the sister tax collection agency, the Commissioners of Customs and Excise. For example, in the administration of the purchase tax, each taxpaying firm is subject to audit four times a year—a record not approached by sales tax administration in any other country. Our states consider themselves lucky if they can audit 20 per cent of the firms annually and many do not reach 5 per cent.

The Shoup paper stimulates further consideration of the question of the factors which have influenced the structure and effectiveness of operation of the tax systems of various countries. Time permits only a iew observations. In the first place the structure and stage of development of the economy is an important consideration. Only in an exchange economy is the satisfactory use of sales and income taxation possible; both taxes are inequitable and difficult to administer in a society in which most of the people are self-sufficient. Even in a predominantly exchange economy, the existence of large numbers of small artisan producers and shops is a serious bar to the successful operation of income and sales taxes. A satisfactory retail sales tax is virtually impossible in an economy in which most retailing is in the hands of small family shopkeepers. Apart from the question of administrative control of small establishments is the danger of the use of the political influence of their owners in a manner detrimental to the establishment of a satisfactory

tax system. In France, for example, these groups have blocked the application of the value-added tax to artisan producers and thus insured continued tax advantages for the less efficient firms and have forced the use of the arbitrary forfaitaire system for small shops, whereby tax liability is merely estimated. Even in the United States and Switzerland the small-merchant group was successful in obtaining chain store taxes during the thirties.

The structure of government is another factor of major importance. As noted by Shoup, a federal system may result in lower levels of rates on those taxes which are utilized primarily by the states. On the other hand, if each level develops a tax without consideration of the use of the tax by the other level, the combined burden may exceed that which would prevail in a non-federal country. This is probably the case with sales taxation in both Canada and Brazil. In other instances, the form of the tax at one level may be influenced by the choice made at another level; the Canadian federal government will not consider a possible shift of its sales tax from the somewhat troublesome manufacturing level to the retail level for fear of complaints by the provinces of intervention in their sphere of taxation.

The use of the parliamentary form of government facilitates boldness in taxation if one party is securely in power, as witnessed by the important innovations in taxation which Canada has contributed in the last two decades and the use which it has made of taxes as instruments of fiscal policy. But the parliamentary form encourages vacillation and reluctance to make significant changes if the government is weak through coalition or slim majority. as witnessed by the failure of the Dutch government to return to a single stage sales tax after World War II because of the fear of the higher rate. Our own division of authority between legislative and executive branches encourages inertia, the difficulty of introducing new techniques without a long process of education of Congress, the failure to review existing taxes in terms of changing conditions, and rejection of proposals merely because of legislative hostility toward the executive branch. The long period of discussion of tax changes makes their use as an instrument of fiscal policy difficult, particularly in cases in which long anticipation of a tax change largely defeats the purpose.

Popular attitudes toward government differ widely and are of great importance with respect to the type of tax structure which can effectively be used and the actual adjustments in the structure and effectiveness of enforcement. If a government commands general respect, as in Great Britain, or a combination of respect and fear, as in Germany, high tax rates and effective enforcement are facilitated. Few countries would dare attempt a tax with the rates of the British purchase tax; few could operate successfully a levy as crude and discriminatory as the German turnover tax for so long a period. Effective enforcement is facilitated by a strong attitude of identification of the interests of the people and the government—an attitude which reaches its highest levels in Switzerland and the Scandinavian countries. On the other hand, a long-standing hostility toward government, often a product of earlier misrule and exploitation, makes tax enforcement difficult. This is a major source of the problems in France, Italy, and the Latin-American countries.

Military occupation may also be significant; a long tradition of hostility toward sales taxation in the Netherlands resulting from the imposition of the alcabala on that country during Spanish occupation delayed use of a sales tax in the twentieth century. In more recent years, the effects of attitudes toward government built up in the Netherlands during the days of German occupation have made tax enforcement more difficult since World War II than it was before.

Other factors, such as the level of education and the general sense of community responsibility, obviously play a part, and it may be suggested that differences in temperament are not unimportant. Discussion of national temperament leads quickly onto shaky ground; yet a comparison, for example, of the Swedish and Italian tax systems suggests that this factor cannot be ignored.

The refinement attained in a tax structure depends in part upon the source of the initiation of modifications in taxation. If the work of a tax research agency in the government, or special governmental committees of outside experts (as in Great Britain), or an independent impartial tax research organization (such as the Canadian Tax Foundation) have considerable influence, the tax structure is likely to be much more rational in terms of usually accepted standards than if changes primarily come from legislators or cabinet members untrained in the field. If the tax-collecting agency has too much influence, however, change is likely to be stultified.

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But logic cannot explain many of the differences in tax structures. Pure accident, the ideas and prejudices of those men who are responsible at particular times for tax legislation, reinforced by tradition, inevitably play a major role. How else can the taxes of 100 per cent or more on chocolates in the Scandinavian countries be explained? The use of the value-added form of sales tax in France is largely the result of the ideas and initiative of one man, Maurice Lauré. The skeleton in the U.S. tax closet—the disgraceful tax upon freight—is a product of the determination of the Senate Finance Committee of 1942 to find 200 million dollars of additional revenue from some source and the fact that this was the only tax they could think of at the time.

One aspect of tradition is particularly important: It is easier to build up reliance on a tax gradually than to introduce one at a high rate; the tax rates which the public and legislative bodies regard as tolerable are in large measure dependent upon the rates to which they have become accustomed. Thus figures regarded as intolerable in some countries are accepted as commonplace in others, even though other circumstances are the same. This is illustrated by the rates of the gasoline taxes of the Canadian provinces compared to those of our states, by Canadian cigarette taxes compared to our own, by the Finnish and Norwegian sales tax rates compared to those regarded as tolerable elsewhere.

One peculiar perversity appears in the tax systems of some countries which defies all logic: the attempt to use taxes which are clearly unsuited for the circumstances. Thus the Italian sales tax is extremely complicated, so much so that probably no country could administer it properly, and least of all Italy. In contrast the Swiss sales tax is probably the simplest in Europe.

Countries which are the most efficient at tax administration appear to be the most conscious of the limitations of various complex features of taxation. The Latin-American countries, ill-suited to administer complex levies, are likewise endeared of them and, like some European countries, are fond of applying taxes to as wide a variety of bases possible rather than concentrating their efforts on a few productive ones. One widespread tax of this character—that on receipts, invoices, and bank checks—is particularly objectionable because it gives added incentive to conduct business without benefit of these instruments, and thus makes enforcement of the far more productive taxes on income and sales much more difficult.

Lowell D. Ashby: Professor Burkhead has concerned himself with the topic, "Financing Education." This he has narrowed for purposes of the present session to a discussion of the financing of public elementary and secondary education. The subject even as so narrowed remains one of the more difficult public policy areas of our time. The author in clarifying it for us has re-examined many important issues.

The material in the paper has been presented at about three different levels of generality.

At the most general level it has concerned the contribution which economic theory can make to policy formulation in this area. On an intermediate level of generality it has involved the question whether present institutional arrangements for the administration of public elementary and secondary schools are optimal. Finally, on the least general level it has examined the probability that a 1965 budgetary target as defined by professional educators can be met.

First, I turn to Mr. Burkhead's comments at the most general level. He says at the outset: "Unfortunately, there is no practicable conceptual framework for analyzing the transfer of resources from the private to the public sector." And further: "The recent efforts . . . to formulate a pure theory of public expenditures within the framework of welfare economics provide no criteria for determining whether specific governmental programs should be expanded or contracted."

I am not completely sure of Burkhead's meaning in the above statements. If he wishes to emphasize that no conceptual framework for analysis exists, I shall have to disagree. It appears to me, on the contrary, that the conceptual framework does exist and that it ties the most vital parts of public finance into the mainstream of economic theory. (See, for example, Paul A. Samuelson, "The Pure Theory of Public Expenditures," Review of Economics and Statistics, November, 1954, and Paul A. Samuelson, "Diagrammatic Exposition of a Pure Theory of Public Expenditures," Review of Economics and Statistics, November, 1955. Note, also, Charles M. Tiebout, "A Pure Theory of Local Expenditures," Journal of Political Economy, October, 1956.) On the other hand, if Mr. Burkhead wishes to place his emphasis on the word practicable, his position is a somewhat different one. Admittedly the conceptual framework which has evolved from the work of economists as positive scientists is not a fit tool for the practical public administrator. Moreover (whatever the future

prospects), the empirical basis for taking immediate and practical issue with particular governmental programs on economic grounds alone may not exist. At the same time, the merits of the conceptual framework now in existence are such that they beneficially influence and will continue to so influence the advice which economists may give on such complex public policy questions as the one here considered. Thus my final reaction to Burkhead's position may be dependent upon my seeing more clearly precisely what his position is.

On the intermediate level of generality, Professor Burkhead considers public elementary and secondary education as a function of government in the local setting. As is well known, most local governmental functions are handled through a general fund or at least through a general governmental budget wherein each function is compartmentalized to a certain extent by the device of separate fund accounting. But the educational function is generally differently handled. Typically, it has its own unit of government, known as a school district, with its own taxing and spending powers. Burkhead attacks this high degree of fiscal independence on the ground that it "tends to frustrate the rational allocation of resources among governmental programs." This contention is hotly contested by many a professional educator and with my limited experience in this specific area I do not feel impelled to take sides. But I do wish to point out that Burkhead as a good economist is advocating a change in the present institutional arrangement on economic grounds. This would indicate that he is not discounting the relevance of economic theory to the discussion of this topic.

However, in attacking present institutional arrangements on the grounds that they are economically offensive, Burkhead opens the door to a wider range of proposals whose proponents often justify them on economic grounds. Burkhead advocates, in effect, the abolition of school districts as units of government and the integration of school budgets into the general budgets at the local position of government. Under this proposal, government remains responsible for both the financing and the administration of education. But some proposals would move further and faster to largely eliminate the public administration of the schools in favor of private administration while retaining governmental financial responsibility. (See, for example, Milton Friedman, "The Role of Government in Education," in *Economics and the Public Interest*, Robert A. Solo, Editor, Rutgers University Press, 1955.) Conceivably—though I know of no responsible support for it—it is possible to move even further to advocate that government relinquish both administrative and financial responsibility.

Each of the institutional variants on the public school theme, whether it be X, Y, or Z, would generate its own characteristic educational product. These products would differ as to quantitative and qualitative composition and as to the degree of jointness or exclusiveness with which each could be consumed. It is on the basis of some intuition about the relative utility generating powers of the alternative products produced by an equal amount of real resources alternatively directed that one institutional variant is generally advocated by its proponents in preference to others. Now this is essentially economic reasoning and I believe it characterizes Mr. Burkhead's advocacy of less fiscal

independence for public elementary and secondary education. I would suggest that the issue deserves still more of Mr. Burkhead's able consideration and that of other economists and that this further consideration should proceed in the light of other closely related proposals for reform.

Finally I turn to Professor Burkhead's discussion on the least general but most immediately relevant level—that concerned with the financial status and prospects of the present program of public elementary and secondary education. In approaching this discussion the author indicates that "expenditures for public elementary and secondary education have more than held their own as a percentage of gross national product." He indicates a ratio of 2.2 per cent in 1929-30 and a ratio of near 2.6 per cent in recent years.1 However, if we deflate both gross national product and school expenditures with the respectively appropriate deflators developed by the United States Department of Commerce (for the appropriate deflators see the Survey of Current Business, July, 1956, Table 41), the ratios move from 2.4 per cent in calendar year 1929 downward to 2.2 per cent in calendar year 1955 with the highest relative diversion to this program occurring in the depression years and the lowest in the war years. On this basis there has been a slight decrease rather than an increase in this ratio over the twenty-seven-year span. If we make further correction for the variation in the importance of the student age group (ages five through seventeen) relative to the total population, there appears to be no emphatic trend whatever over the entire period in the relative importance of the real effort put into this program. But this point is relatively minor.

The most important part of the author's discussion, it seems to me, centers about the target defined in terms of expenditures for the public elementary and secondary school program in 1965. To recapitulate, as advocated by many educators and tentatively accepted by Burkhead and by me, this target is as follows:

Annual Rate of Expenditure on Public Elementary and Secondary Schools on Both Current Operation and Capital Outlay (1955 Dollars), in Billions

 The 1955 program as dictated by the 1955 enrollment and 1955 standards

10.0

Required to increase the program quantitatively to the level dictated by 1965 enrollments:

Current operation Capital outlay 1.5 2.5

4.0

<sup>1</sup> My own computations of these percentages from the appropriate current dollar fiscal year (July through June) quantities are:

School

	GNP (Cur	Expenditures rent dollars in millio	Fraction ons)
1929-30	97,770	2,251	.0230
1954-55	375,757	9,365	.0249

Sources: Fiscal year current dollar gross national product adapted from the Survey of Current Business (July, 1956) and current dollar school expenditures from the Office of Education of the Federal Security Agency.

3. Required to increase the program qualitatively to bring the low standard schools up to the 1955 standards of the best schools by 1965

6.0

Total needed annual rate of expenditure by 1965

20.0

The foregoing target is defined in terms of a desirable annual rate by 1965. Of course, hitting this target by way of one route is not economically equivalent to hitting it by way of another and to this extent it remains an unsatisfactory formulation. For this reason we shall have to forego the important question of whether any particular definition of a time-growth pattern would prove cumulatively adequate to wipe out any present specific construction and teacher shortage backlog by 1965. Since the needed cumulative effect of whatever time series path we are to follow is not unequivocally specified, we shall accept the sensible though imprecise implication that we must gradually grow into a program double the real 1955 size by 1965.

Professor Burkhead considers the probability of hitting the target rate of expenditures in 1965 in terms of the revenue raising capacities of state and local governments in the face of an assumed increase in the gross national product and known state-local revenue elasticities. On this basis he finds the alternatives discouraging. He finds it difficult to visualize a doubling of the yield of state-local revenues for schools from 10 billions to 20 billions of 1955 dollars. Moreover, in case the added 10 billion dollar burden were to be assumed by the states alone, he finds it even more difficult to see the necessary 75 per cent rise in state revenues for this purpose. Probably many states could with benefit emulate the example of Pennsylvania in authorizing new tax sources for local government use. Apparently, however, the crisis will have to become even worse than it now is to dislodge the positions of many states. Many insist that education is a local responsibility and at the same time either deny or find themselves unable to provide the local units the revenue sources with which to handle it.

In looking ahead, Burkhead rightly points out that, assuming a 100 billion dollar rise in gross national product (valued in 1955 dollars), we can anticipate a state-local revenue response for all purposes of only 3.3 billion in contrast to the needed 10.0 billion on the educational program alone. On the other hand, he finds that the potential revenue response of the federal government might come to 17 billion dollars—a sum potentially adequate to the task.2

In the light of the foregoing it is not surprising that the author concludes reluctantly that "the fiscal pressures which are building up at the state and

state revenue response local (school district) revenue response federal revenue response

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(.25585) (.8) (\$13.5 billion) = \$ 2.76 billion

(.25585) (.75) (\$ 5.0 billion) = \$ .96 billion (.25585) (1.5) (\$70.0 billion) = \$26.86 billion

<sup>&</sup>lt;sup>2</sup> My own computations, based upon what I assume to be Burkhead's premises, yield a slight variation on his results. Thus gross national product in 1955 was \$390,860,000,000 and the assumed increase of \$100,000,000,000 would make the ratio of the latter to the former .25585. Hence:

local school district level will force continued consideration of federal aid to education."

Burkhead's findings above have been made by way of consideration of the probable state-local revenue response to the prospective rise in gross product. This analysis could be extended to include the probable school program expenditure response to the rise in revenue yield. With this in mind, I have made certain computations which, while broadly corroborating what Burkhead has found, go beyond it in the above respect.

For the twenty-seven-year period 1929 through 1955, I have computed a constant which I call the marginal tendency to commit adjusted real resources to this program with respect to real gross national product. It turns out that on the average over this long period for every \$100 of increase in real product we have committed slightly more than \$1.39 of adjusted real resources to this program. This combines both the state-local tendency to get revenues out of gross product increases and the tendency to commit revenues to this particular program out of revenue increases. (Actually my estimate is simply the slope of the line representing the estimating equation between constant dollar gross national product, taken as the independent variable and adjusted constant dollar expenditure on public elementary and secondary education taken as the dependent variable. The adjustment to constant dollar expenditures was made by way of a student-load deflator where the ratio of population aged five to seventeen to total population for each year constitutes the basic data. The year 1947 was taken as the numeraire in this respect; that is, the index for 1947 = 100.)

Now assuming that no major change in financial arrangements is made and that we continue this response pattern of the last twenty-seven years, what can be anticipated in the next ten years? If we follow Burkhead in anticipating a 100 billion dollar rise in real gross national product, the added commitments of state and local resources (valued in 1955 dollars) would turn out to be under 2.5 billion, far short of the needed 10.0 billion.

If we relax Burkhead's assumption that real gross national product will grow no more than 100 billion of 1955 dollars by 1965 (2.64 per cent compounded annually between a 1955 trend value of 336.4 billion dollars and a 1965 trend value of 436.4 billion) and make the assumption that it will grow at the constant rate evident in the years 1929 through 1955 (4.33 per cent compounded annually between a 1955 trend value of 336.4 billion dollars and a 1965 trend value of 513.9 billion), then in the event the old response pattern persists, we can expect an expenditure increase of about 4.5 billion of 1955 dollars or a shortage from the defined target of about 5.5 billions.

Thus, even if we make the strongest assumptions about real product growth which seem prudent, persistence in doing "what comes naturally" with this vital program will leave us less than half way to the 1965 target of 10 billion dollars added annual rate of expenditure. In other terms, it will fail to provide nearly all of the hoped for qualitative increment in the program.

The fact remains, whether we use Burkhead's analysis or my own, if the defined target represents adequate finance for the present program, the old state and local response patterns cannot provide such adequate finance. This

means that if we are to retain the present program and hit the defined target one of two things must happen. Either the states and localities must break out of long-established financial routines or the pattern of primacy of state-local financial responsibility for this program must give way to substantial federal aid.

EARL C. CROCKETT: Professor Burkhead focused his attention upon the financing of public education at the elementary and secondary levels. He cutlined broad aspects of the problem of financing which will face us during the next decade, indicating that by 1965 the demand for public education expenditures is likely to be at least 10 billion dollars greater each year than at present. Although GNP is expected to increase, the added amount required for public education may take 3.5 per cent of total GNP by 1965 as compared with a current ratio of 2.5 per cent. This poses an anticipated difficult problem, not only of financing, but also of physical performance. As he indicated, many additional classroom units and a vast increase in the number of teachers will be required.

It is upon the latter problem—the shortage of teachers—that I wish to address my remarks. In some manner we must induce more people to prepare for the service of teaching; after they are once prepared we must induce a larger proportion of qualified teachers to stay with the profession of teaching. Shortages are already becoming evident on all levels of instruction from the kindergarten to the graduate school of the university. This shortage will become still more acute, perhaps proving to be our most difficult educational bottleneck.

In addition to the measures suggested by Professor Burkhead for solving, at least partially, the teacher shortage problem, I would like to discuss for a moment still another proposal which may have some merit. It has been suggested that federal aid to students for higher education would reduce the teacher shortage. Since 1950, proposals for federal scholarships and other forms of student aid have been considered in every session of Congress. Indicating an ever growing interest, during the first session of the 84th Congress (1955) over fifty bills were introduced proposing some form of federal aid to college students. These bills—none of which became law—proposed a wide variety of forms of aid. Some proposed scholarships, others fellowships; some proposed outright grants while others would have permitted only loans which would be later repaid by the students. Some proposed grants which would have been confined to certain specified fields of knowledge (notably the sciences). However, some proposals were general in nature, making no reference to academic disciplines. There were also proposals to offer special income tax deductions or exemptions for students in college or else to the students' parents.

Because of its probable direct effect upon the supply of teachers, I would like to confine my remarks to one certain proposal for federal aid which was put forward. The proposal is that the cost of tuition, books, and perhaps also an allowance for maintenance be advanced to about 100,000 superior yet needy high school graduates each year so that they may attend college. This

100,000 figure is based upon the President's Committee on Education Beyond the High School First Interim Report, published November, 1956, in which the Committee estimates that each year 100,000 of the nation's most talented high school graduates do not go on to college chiefly for financial reasons. The distinctive feature of the proposal is that the money advanced by the government would need to be ultimately repaid by the students unless they engage in teaching. Moreover, the loan would be considered automatically repaid at the equivalent rate of one year of full-time teaching for each year of aid as a student. Supporters of the proposal hope that by the time the government would be repaid (in teaching services rather than in money—it should be kept in mind that the teacher would pocket the entire salary received from his school) that at least the more successful teachers might wish to continue in the teaching profession.

Assuming an arbitrary figure of \$1,000 per year of student aid and assuming that the student repays in teaching services rather than in money, what would the program cost the national government? The cost would be 100 million dollars the first year (assuming 100,000 students) and would increase to a maximum of 400 million by the fourth year (assuming a four-year program for each student). Claimed advantages of this type of program include the following:

- 1. By extending aid to capable yet needy students, additional young people would be provided higher education in accordance with their potential talents. The present waste of human resources because too many students drop out of school too soon must be considerable. Reference has already been made to the estimated 100,000 talented high school youngsters who graduate each year and do not go on to college chiefly for financial reasons.
- 2. By extending aid to those with an aptitude for teaching, permitting repayment after graduation by several years of teaching service, the critical shortage of teachers in all fields and at all levels of instruction might be alleviated.
- 3. An important advantage of federal scholarship aid (in most any form) is that such assistance need not involve controversies regarding racial segregation or aid to private institutions. Each student could be permitted freely to select the school of his choice from a broad list of accredited institutions.
- 4. The proposed system would not likely lead to federal control of education. Student aid under the National Youth Administration in the thirties and more recently the veterans' educational benefits illustrate the practicability of federal scholarships without the development of federal control over education. Incidentally, they also illustrate the feasibility of such aid without involvement in the racial segregation controversy.
- 5. Federal aid to needy students might indirectly provide some financial assistance to colleges and universities. This could come about through reducing the number of scholarships and fellowships now granted by these institutions. However, to the extent that this occurs, the primary objective of the federal grants—a greater total number of students preparing themselves to become teachers—might not be fully accomplished.

Possible disadvantages of the proposed federal scholarship aid program include the following:

- 1. As higher educational institutions are already becoming crowded and will be even more crowded in the near future as the war-babies begin reaching college age, this may be an inappropriate time to introduce a federal system of student aid. Why accelerate the crowding of our colleges and universities? However, at least a partial answer to this argument is that unless the higher educational institutions are willing to contend with overcrowding for a period, the teacher shortage problem cannot be solved for the elementary and secondary schools and to a lesser extent even for the colleges themselves. In order to prepare more teachers for the future we may be forced to condone the overworking of current college faculties.
- 2. Another objection raised to the proposed federal aid program directs attention to several problems of administration. How would students be selected? Would a certain number be allocated to each state or would students be selected without regard to residence? Would participating higher educational institutions be supervised to any extent? If so, how and by whom? How would the national government supervise the teaching activity during the necessary period required for repayment of the student aid? Should a federal aid recipient fail to find or to accept a teaching position, how would the government enforce repayment of the loan? These are all questions which need cause some concern. Perhaps answers can be found.

In conclusion, I wish to express agreement with Professor Burkhead. Although the scope and methods of educational finance directly affect the allocation of resources and consequently the general economy, the subject is largely concerned with economic ethics and appears to lend itself more to political treatment than to scientific economic analysis.

# DEVELOPMENTS IN BANKING AND MONETARY POLICY

## THE CANADIAN TREASURY AND MONETARY POLICY

By JOHN DEUTSCH University of British Columbia

After World War II there was a profound change, in Canada as elsewhere, in the avowed role of Treasury policy. At the outset of the war, the Minister of Finance explained his task in this way: "Budgeting at the best of times is not a pleasant business, as it involves essentially the counting of the cost of what we do." In his first budget following the war the Minister emphasized the larger concept which thereafter was to guide the development of fiscal programs. He pointed out that "the government has adopted, as a major aim of government policy, the maintenance of a high and stable level of income and employment. Accordingly, it becomes a major consideration in budget policy." The almost exclusive emphasis upon "a high and stable level of income and employment" was characteristic of the early postwar. years. Later in the postwar decade another factor was introduced. This factor has risen to prominence and in the most recent announcement of aims it is stated that "the objective should be to maintain a steady growth in economic activity without the process of expansion giving rise to inflation and instability."

It has been the declared policy of the Canadian government that the twin objectives of economic expansion and financial stability are to be pursued by methods which would give encouragement to private enterprise and freedom to the consumer. Consequently, the policies which were adopted to influence both the internal and external operations of the economy were confined almost exclusively to those which worked through the price mechanism rather than through use of direct and qualitative controls. The degree of reliance upon indirect and quantitative measures has been greater in Canada than almost anywhere else and has been a distinctive feature of postwar policy in Canada. The Treasury and the central bank were, of course, the main instrument for implementation of this policy. It is the purpose of this paper to describe and to assess the respective roles of these two bodies.

One cannot get much enlightenment on this subject by an examination of the formal relationships between the Department of Finance and the Bank of Canada. For one thing, in Canada we have not had the opportunities for education which have arisen elsewhere out of wide-open controversies and public disputes. On this score there has been much sweetness and very little light. The legal and formal relationships between the Treasury and the central bank in Canada lie somewhere between those which prevail in the United Kingdom on the one hand and those in the United States on the other. In the United Kingdom the Treasury may, if action is thought to be "necessary in the public interest," give directions to the Bank after consultations with the Governor. In Canada the central bank is not subject to such directions in the sphere of monetary policy proper. Occasions for direction arise only in connection with matters for which the Bank acts as agent for the Minister of Finance; namely, the exchange rate and the technical management of the public debt. Although the Bank is wholly owned by the government, the bank is by statute responsible for the initiation and conduct of monetary policy. However, the independence of the management of the Bank of Canada is not quite as complete as in the case of the Federal Reserve System in the United States. The Bank of Canada is under the management of a board of directors, the members of which are appointed for relatively short terms by the government. The governor, who is the chief executive officer and chairman of the board, is appointed by the directors with the approval of the government, for a seven-year term during good behavior. Under this arrangement it is clear that, in case of a serious and basic difference of opinion, a determined government could force the resignation of the governor. Such a step, however, would be a grave matter before public opinion. The circumstance has never arisen and ministers of finance have testified that serious differences of opinion have never existed for any length of time. It should be noted further that the Deputy Minister of Finance, who is the permanent head of the Treasury, is ex officio a member of the board of directors and of the executive committee. Consequently, it may be expected that consultation between Treasury and the Bank is continuous and close. Proposals for important changes in monetary policy are thoroughly discussed between the two authorities, but in the end responsibility for decision and action in the field of monetary policy rests with the Bank. In other words, there is administrative provision for the close co-ordination of fiscal and monetary policies, but at the same time there is a division of responsibility and a strong shield against direct political interference in monetary matters.

Under these institutional arrangements not much can be learned from a further study of formal relationships. It is more likely that fruitful results can be obtained from a study of actual events and from an examination of monetary and fiscal developments during the recent past, in the light of the aims of public policy to which I have referred at the outset of the paper. It will be the purpose of this analysis to indicate concretely how the Treasury and the central bank have operated in the Canadian scene and to point to some conclusions which might be drawn from Canadian experience.

(Immediately upon the termination of the war, Canadian monetary and fiscal policies were strongly directed to the encouragement of economic expansion. The governor of the central bank had announced in advance that "it therefore seems appropriate that the Bank should. by reducing its Rate, signify its intention to continue the kind of monetary policy which has brought about the current level of interest rates. . . . Indication that the Bank intends to continue this easy money policy should be helpful in making plans for the future." This view of monetary policy was endorsed by the government in its official statement of postwar aims where it was announced that "the government desires and expects that low interest rates will continue after the war. It proposes to pursue a monetary policy which will encourage, through low interest rates, the investment of funds in productive capital contributing to employment." Thus a cheap money policy was deliberately adopted and maintained for the next several years. The fiscal measures which were implemented by the Treasury during this period were specifically designed to promote expansion and the reconversion of industry from war to civilian production. Taxes were reduced and their impact adjusted so as to promote private investment and to increase incentives. Credit facilities for small business and agriculture were expanded. A generous program for the re-establishment of veterans was adopted. Machinery was established for financing a large expansion in housing construction. Welfare schemes were extended for social purposes as well as for the purpose of stabilizing incomes in the lower income groups. A large program of foreign credits was put into effect rapidly in order to assist wartime allies to reconstruct their economies and in order to promote Canadian exports immediately and in the longer run.

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This impressive array of expansionary measures and cheap money has a strange aspect, in some respects, when viewed from this distance in the light of hindsight. It must be remembered, however, that there was at the time a very lively fear on the part of the general public and the authorities of the recurrence of unemployment and depression following a short-lived boom. The expansionary program was put into effect in circumstances when the economy was in a high state of liquidity and when there was a large backlog of unfilled consumer demand and deferred capital expenditures. It was realized, of course, that

inflationary pressures might possibly arise, but this problem was to be dealt with, not by monetary measures, but by the maintenance of wartime controls during a period of transition, and after that by the operation of an anticyclical fiscal and budgetary policy. The government announced that "it will be prepared, in periods when unemployment threatens, to incur the deficits and increases in the national debt resulting from its employment and income policy. . . . In periods of buoyant employment and income, budget plans will call for surpluses."

The expansionary policies succeeded admirably with the help of favorable external influences. The transition from war to peace was accomplished with remarkable ease. The Canadian economy began a new surge of growth. In each of the three years between 1945 and 1948 there was an increase in real output. The objective of high levels of employment was accomplished, but the objective of financial stability was not. During this short period the level of wholesale prices rose by more than 50 per cent. Rising prices abroad—especially those in the United States—were important contributing factors. Despite these developments, the easy money policy was maintained and the money supply continued to expand. Bond prices were not permitted to fall significantly and yields remained low. In 1947, when exchange difficulties were encountered because the rate of foreign lending exceeded the surplus in the balance of payments, monetary policy was not brought into play to any important extent. In the search for corrective measures, almost complete reliance was placed upon restrictive fiscal policies, temporary import controls, and programs designed to expand export earnings. In explaining a slight drop in bond prices in early 1948, the Bank stated that it was "not in favour of a drastic increase in interest rates which . . . might hamper essential forms of capital investment..."

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During this first period of postwar inflation, the task of limiting inflationary pressures was assumed almost entirely by the Treasury. Two devices were employed: the appreciation of the exchange rate in 1946 and the anticyclical budget which yielded surpluses designed to drain excess purchasing power from the economy. The Minister of Finance supported the cheap money policy and stated his opinion that a rise in interest rates sufficient to produce results would bring about such a drastic fall in bond prices and create such chaotic conditions that no responsible person would recommend it as a deliberate measure. The concern about bond prices arose, at least in part, out of a desire to protect those who purchased bonds in wartime. The attitude towards interest rates was based on the belief that moderate increases would not be effective. On the other hand, serious difficulties were encountered in the application of appropriate fiscal policies. Time and again the

Minister warned that economic considerations alone would justify increases in taxation but because of the anxiety of the public to get out from under wartime burdens of taxation, because of the effects of high taxes on production incentives, and because of many other practical considerations he was being put into the pleasant position of being able to announce important tax reductions.

The budget surpluses proved to be inadequate and not sufficiently effective as a device for maintaining financial stability. The surpluses were substantial and undoubtedly had a moderating influence, but these surpluses were themselves largely the result of the higher yields obtained from inflationary increases in prices and earnings. It would appear that the main contribution of the surpluses was to help counter the effects of an excessive supply of money and credit without coping with the root causes of the problem. Given the determination to maintain a cheap money policy under the circumstances which prevailed, both at home and abroad, the budget surplus was the only way of keeping inflationary forces from going altogether too far.

The first wave of postwar inflation ended in Canada during the latter part of 1948, as it had slightly earlier in the United States. The economy had pretty well adjusted itself to the postwar money supply. Prices, wages, and money earnings had reached a new plateau. Thereafter the economy was financially stable until the next wave of inflation struck following the outbreak of the Korean war in mid-1950. The problem now presented itself in a somewhat different form. The sharp increase in defense expenditures came on top of the economy which was already operating at full capacity. In this respect the situation was somewhat more strained in Canada than in the United States. Also, sharply rising prices abroad resulted in a sharp increase in Canadian export and import prices. In these circumstances both fiscal policy and monetary policy underwent significant modifications. Complete reliance was no longer placed upon restrictive fiscal measures operated by the Treasury. Monetary policy was brought into play, but not with full vigor. Interest rates were permitted to rise only very moderately. Bank credit and the money supply continued to expand during the period of most severe pressure. When this became a matter of concern, a step was taken which was outside traditional monetary action. An over-all quantitative ceiling was applied on commercial bank credit with the agreement of the commercial banks. In the field of fiscal policy, restrictive measures were put into effect to limit somewhat the expansionary economic programs which had been adopted earlier. Curbs were placed upon the availability of credit for consumer purchases and housebuilding. The exchange rate was set free in September, 1950.

to help ward off the inflationary influences of a massive inflow of short-term speculative capital. Government expenditures for civilian purposes were held to a minimum. Tax allowances for the depreciation of certain new capital assets were deferred in order to discourage non-essential private investment. Taxes on individuals and corporations were substantially increased in order to achieve a fully balanced budget and to carry out a pay-as-you-go policy.

The significant feature of this program lay in the fact that the antiinflationary measures were based primarily upon fiscal and monetary policy. There was no resort to any general system of direct controls as had been adopted in the United States. The methods used in Canada were designed to operate through the flexible mechanism of the price system. This time there was a somewhat better balance between fiscal and monetary measures, although fiscal measures continued to predominate. There was still a lively doubt about the effectiveness of traditional monetary devices. However, it is noteworthy, also, that on this occasion there was no deliberate intention to achieve a budgetary surplus as the principal safeguard against inflationary pressures. In fact, surpluses were realized, but again they were mainly the result of higher returns from inflationary increases in prices and incomes and from a lag in expenditures. Between June, 1950, and September, 1951, the general level of Canadian wholesale prices rose by about 15 per cent. This development in Canada compared favorably with what took place elsewhere.

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The second wave of postwar inflation subsided towards the end of 1951. Throughout the next two years the economy achieved a very rapid rate of growth without generating inflationary pressures. The twin objectives of economic expansion and financial stability were being realized. In 1954 there was a slight recession. The easy money policy was resumed and taxes were reduced. From the point of view of this paper, two significant changes took place during this period, in the fiscal and monetary fields. The concept of the anticyclical budget was considerably modified although not completely discarded. Against the background of the 1954 recession the Minister of Finance proposed in April, 1955, a cut in taxes and went on to recommend "a tax policy and a tax structure that would produce a balanced budget under conditions which represent a high level of output and employment." Because such a high level of activity was not expected to prevail during the early part of the year, the Minister anticipated a modest deficit. In other words, budget policy was to have a moderately stabilizing effect in either direction with a tax structure that was appropriate under optimum economic conditions. There is a considerable difference between this concept and the concept of the budget surplus as the dominant instrument for the maintenance of financial stability or for closing the so-called "inflationary gap."

During this same period, 1952 to 1955, the central bank began to take important steps to improve the environment for a more active monetary policy. Previously there was considerable skepticism regarding the efficiency and effectiveness of monetary action. This opinion was based partly on a belief that the available monetary instruments were too blunt, that they were too disruptive in their effects, and that they could not be operated with sufficient dexterity. This belief was re-enforced by the absence of an adequate short-term money market in Capada and by the lack of control over certain factors which could have important influences in financial markets. Beginning in 1953) the Bank of Canada took a series of steps which were designed to improve the monetary mechanism. An active and more substantial short-term money market was established. It was announced that the Bank rate would be used more flexibly in the future. Procedures were developed whereby the Bank could keep more closely and more directly in touch with day-to-day monetary changes (In the latter part of 1955, an agreement was reached with the commercial banks regarding the maintenance of a minimum liquidity ratio which made it possible to have a more effective influence on the supply of bank credit;

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These improvements acquired considerable importance when new inflationary pressures became evident in the latter part of 1955. Monetary policy was rapidly brought into action and the traditional means of credit restraint were vigorously employed. The cash reserves of the commercial banks were held in check, the Bank rate was increased by successive steps, bond prices were allowed to fall substantially and both short-term and long-term interest rates were permitted to rise to the highest levels in many years. These measures were supplemented by other arrangements worked out on the initiative of the central bank, which were designed to place restraint on the supply of credit available to stock markets and for installment buying.

During this most recent period of inflationary pressure, the vigorous exercise of monetary policy has become the dominant means for the preservation of financial stability. Thus far, the contribution of fiscal policy lies in the maintenance of tax rates which yield a modest budget surplus. At this stage in our postwar history, the wheel has taken a full turn.

In the light of these changes and events, Canadian experience would indicate that fiscal policy has significant limitations as the basic instrument for the maintenance of financial stability. A tax structure and tax rates which would appear to be necessary in circumstances of

severe inflationary pressure, when monetary policy is passive, are likely to conflict with other important aims of public policy. The appropriate tax rates are likely to have a perverse effect upon incentives and costs. This effect may itself create distortions and enhance inflationary pressures on earnings and prices. Attempts to avoid these perverse effects through the use of hidden and indirect taxes are hampered by considerations of equity and social welfare.

The fiscal instrument has further disadvantages because it is not sufficiently flexible and because opportunities for changes tend to be governed quite strongly by the time table of democratic processes. The time table regarding parliamentary sessions and elections may or may not coincide with developments in the economic scene. Likewise the expenditure side of the budget is subject to the influences of external events and social forces which at any particular time may dominate the budgetary situation. On the other hand, the very large budgetary surpluses which may be necessary for an effective counter to inflation undoubtedly weaken the traditional parliamentary procedures for the maintenance of economy in the operations and functions of government. In brief, fiscal measures in most countries are more directly and more immediately related to the "stuff" of politics than is monetary policy.

It is admitted that fiscal policy has a powerful effect on business activity and has an indispensable role in the maintenance of financial stability. However, recent experience has demonstrated that it is not a substitute for but a necessary concomitant of flexible and appropriate monetary action. It is not, of course, intended to imply that such appropriate monetary action can be counted upon to do the whole of the job in all circumstances. But monetary policy must play an active and positive role in suitable combination with other measures. The attempt to find such a combination in Canada has not revealed any ready-made formula. Obviously there is a great deal left for scholars to do regarding the operation and results of both fiscal and monetary measures before the right answers are found, if indeed they are ever found.)

This analysis of the changing roles of fiscal and monetary policy in Canada during the past decade should not be completed without some reference to certain circumstances and developments of this period. The regime of the cheap money policy in Canada coincided fairly closely with that in the United States. The extent to which it might have been possible to pursue a difficult course in Canada with substantially different results, given the close financial and economic ties between the two countries, remains an unanswered question. Also, it should be pointed out that the Canadian economy operated at full

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capacity, with only minor exceptions, throughout the postwar period. The economy attained a very rapid rate of growth—a rate which has exceeded that realized in the United States. However, these results were accompanied by a decline of more than one-half in the purchasing power of money. In Canada, as elsewhere during the postwar period, the policies of expansion took precedence over policies which could be applied more effectively to preserve the value of money. Nevertheless, the aims of public policy continue to be centered on the promotion of sustained economic growth within a framework of stable prices. Assuredly, the experience of this postwar period deserves close examination in respect of attempts to realize these twin objectives in the future.

# DEVELOPMENT AND IMPLICATIONS OF FEDERAL RESERVE POLICY

By WALTER A. MORTON University of Wisconsin

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Monetary policy operates primarily through control of member bank reserves. Its immediate impact is on the lending power of banks, on interest rates, on the quantity of money and incidentally perhaps on its velocity. These effects are not, however, its ultimate objectives. It is not the function of the Federal Reserve to be concerned about the rate of interest as a distributional factor, nor about the volume and profitability of loans and investments. These are merely the instruments to attain a more basic purpose: to regulate the value of money and to maintain a high level of economic opportunity.

The effectiveness of monetary policy is measured by the degree to which it helps to attain these objectives.

Within the limits of the law, the Federal Reserve System has the power to increase or diminish the free reserves of banks through its control over reserve requirements, discount rates, and open-market operations. Ever since the war the highly liquid condition of the banks has made it more difficult to exercise this control. It has also made banks more willing to lend to commercial customers. The liquidity of the banks resides primarily in the government short-term securities which they can sell or hold to maturity. If the Federal Reserve is not buying, selling may be difficult or costly, but if these securities are left to run off at maturity, it is the Treasury which must provide the cash, and since the Treasury must in turn obtain funds by selling securities to other banks or to the Federal Reserve System, the ultimate responsibilities for Treasury solvency and short-term liquidity rests upon the Federal Reserve System. In terms of sheer power, the Federal Reserve could offset all such attempts of banks to increase their reserves, but such a policy would increase the difficulties of Treasury refunding operations and could create a chaotic condition in the money market. This is one of the factors that has operated to moderate policy. Refunding of Treasury debt into long-term issues will diminish this liquidity. However, during periods when interest rates are low and the demand for commercial credit is small, the refunding does not appear necessary as an anti-inflationary device; and during periods when government bond yields are relatively high, it is impossible. We have

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the paradox of debt management, that when refunding is possible it is neither necessary nor desirable; and when necessary and desirable, it is impossible. In favor of the high liquidity is the tendency for a liquid banking system and a liquid community to maintain expenditures in face of shocks to various parts of the economic structure; against liquidity, is the inflationary tendencies that it engenders and which for the reasons given are less subject to control.

Recent experience shows, however, that the liquidity of member banks is not an effective barrier to credit control. It makes the task a little more difficult, but there is no doubt that the Federal Reserve could keep reserves under effective control to whatever amount is deemed appropriate to the circumstances. Having done this, the direct responsibility of the Federal Reserve for the result comes to an end. It cannot determine whether it will be effective or ineffective. It can merely exert an influence of greater or smaller degree in the cost and availability of credit. Of course, tight money could be made so tight as to demoralize the economy and cheap money so abundant as to lead to needless inflation. Such "effectiveness" is, however, not to be sought after.

#### II

The immediate impact of monetary policy is on interest rates. Interest rates may be considered as a cost and as a signal or warning. It is held that borrowing will be increased if interest rates are below the marginal efficiency of capital and decreased if above. Or in Wicksell's terms, demand for loans is encouraged if the bank rate is equal to or below the natural rate, and restrained if above it. It follows then that a noninflationary policy would keep the bank rate just equal to the market rate or the natural rate, and central bank policy would follow changes in economic conditions.

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Nowadays we often speak as if interest rates were determined by discount policy, in contrast to Wicksell and the Classicists who believed they were determined by economic conditions. In the neo-Keynesian view, the central bank determines the interest rate by the degree to which it offsets liquidity preference, whereas in the classical view, upheld by Wicksell, the central bank adapted itself to the market rate. In my view, the Keynesian position has more validity during stagnation than in periods of normal high employment such as we have had in the past several years. In such a period the supply of savings and the demand for real capital create a natural rate of interest which the central bank can lower only by promoting inflation. However, let us first examine our concepts in more detail to see whether the Wicksellian objective is an operational one.

It is said that equilibrium is reached when the interest rate is equal to the natural rate or the marginal efficiency of capital.)

What is meant by the interest rate? Even if that term is construed liberally to mean some composite or average of customer rates and bond yields, none of these would represent the true cost of capital to most industrial borrowers. Corporate capital structure may be 100 per cent common stock equity, or some combination of stocks and bonds. Manufacturing companies carry about 15 per cent debt on the average; various utilities have debt and preferred stock ranging from 35 to 60 per cent. The cost of capital to these companies is therefore not the interest rate charged by banks, nor is it merely the bond yield, but a composite figure which takes into account both debt and equity capital. It is this latter—composite cost of capital—which must be equal to the marginal efficiency of capital if the purported equilibrium is to be reached. We cannot assume that corporations will merely compare the cost of debt money to expected profit rates in order to determine the desirability of expansion. The comparison, if it is made at all, must be with the over-all cost of money.

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A rise in interest rates may start with the government bond market, but if it persists, it gradually extends throughout the market to all classes of debt securities, to preferred stocks and even to the rate at which common stocks are capitalized. The increased interest rates during the past year have caused a rise in railroad, industrial, and utility bond yields and in the yields of state, municipal, and United States government securities. The effects have been felt on preferred stocks and can be seen most readily in those where changes in the credit status of the company do not conceal the rate of capitalization. Dear money has also probably raised the capitalization rates on common stocks during the past year and thereby increased the cost of equity money. This factor, however, is not as readily established because the prices of common stocks also reflect changes in psychology and in expected earnings. It is, however, reasonable to conclude that the over-all cost of money is affected by the general conditions that also determine interest rates on debt securities. But since the rising cost of money is predominantly caused by corporate demand based on expectations of good profits, it is not clear how the rising cost of money is, in itself, much of a bar to corporate expansion.

Now let us turn to the rate of profit. The earnings on total invested capital of all manufacturing corporations in the United States from 1946 to 1955 have averaged about 10 per cent and earnings on the common stock equity have averaged closer to 12 per cent. The marginal rate of profit on new investment is usually expected to be equal to or even greater than the average rate. Since the over-all cost of

money is the expected rate of return on new investment, or about 10 per cent, it follows, according to the Keynesian-Wicksellian theory, that investment will not be carried on unless the companies can obtain new capital for about 10 per cent. What must be in equilibrium is the expected rate of return to be earned by the new investment and the expectations of the investors who furnish the money.

( However, there is essential truth in Keynes and Wicksell, A restriction of the quantity of money will cause interest rates to rise and will cause some potential borrowers to withdraw from the market or to be excluded from it for whatever reason. And since it is this reduction of borrowing that is desired, the aim of policy has been achieved. After the fact, it can then be said that the portion of potential investment demand which did not become actual demand at the prevailing rates represented the marginal increments. This retrospective judgment can then be used in support of the Wicksellian-Keynesian theory of an equilibrium between money costs and profit rates. But the guide to policy is not this equilibrium nor the behavior of interest rates but the effect on aggregate demand. I conclude, then, that the Keynesian-Wicksellian theory appears to present us with an equilibrium between two quantities when in fact it presents us only with an equilibrium between two expectations neither of which is subject to measurement precise enough for the determination of monetary policy.

It would nevertheless be an error to assume that we cannot establish the effectiveness of monetary policy unless we can predict its effect on interest rates and the effect of interest rates on investment. Such a sequence is desirable but not necessary. All that we need to show is that with less money there will be less aggregate demand, whatever its effect is on interest rates and whatever be the mechanism of restriction.)

#### III

It is the function of monetary policy to control total monetary demand. When demand is excessive, it must be deferred; when insufficient, it must be accelerated; when adequate, it must be maintained. The investment that is deferred during periods of tight money because of scarcity of materials can be made at a later date when more resources are available and when monetary policy will, accordingly, be less restrictive. This is the ground in common sense and in experience for varying the availability of credit. So long as the total quantity of money is restricted, some loans must be deferred because all demands cannot be satisfied at the same time with the same quantity of money. We must not forget that the long-term borrower agrees to pay higher

interest costs not only for the year but for the life of the loan or until the bonds are called at a premium. A higher interest cost of 1 per cent per year for say thirty years, without compounding, is 30 per cent. If it is possible to delay the borrowing for a year or two and get money 1 per cent cheaper, total interest costs for the life of the bonds will be reduced by 30 per cent of the principal amount. Ordinarily borrowers seek to issue callable bonds, but during really tight money, call provisions are made costly and lenders may even insist upon a share in prospective profits by having the bonds made convertible into stock. Some borrowers will accordingly delay borrowing and expansion programs until times appear more propitious. Recently some corporations found no bids for their prospective security issues. Municipal corporations and states have refused to issue bonds because of the higher rates of interest. Without such withdrawals from the borrowing market, interest rates might have advanced even further. Lack of availability meant higher rates and less borrowing.

Inasmuch as the object of tight money is to diminish effective demand, this end will be served if reserves are limited regardless of whether such limitation results in a large or small rise in interest rates. If the demand for borrowed money is highly elastic, only a small interest rise will occur: if it is highly inelastic, a great rise must occur before the total funds will be rationed. For that reason the effectiveness of monetary policy must be measured by the behavior of price and production indexes and not by interest rates. Higher interest rates may serve as a deterrent to new investment where interest costs bulk large as a portion of total costs, such as in housing and utilities. In the latter case, however, higher money costs in a particular year do not greatly affect the average imbedded cost of debt money, and in any event utilities must still render service and seek to recover a higher cost of money in higher rates. Higher interest costs on residential construction increase carrying costs appreciably and affect the decision to buy now or to buy later. Furthermore, high interest costs may be construed as a warning that prices are too high and may be lower. This also serves to delay purchases.

When, on the other hand, a great decline in the expected rate of profit sets in and grips the imagination, a small saving in interest will hardly be effective. Hence the effectiveness of cheap money depends upon the state of despair which it is asked to combat. In the event of a minor recession, cheap money is an invitation to renew the demand deferred from the boom and an encouragement to new efforts. That such a policy was ineffective during the thirties does not signify that it need be equally ineffective in subsequent periods of minor recession.

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In recognizing the effect of monetary policy on interest rates, I do not subscribe to the view that the level of interest rates can ultimately be determined by monetary policy. The liquidity preference theory of interest grew out of the unusual experience of the Great Depression when the intense need for cash induced the sacrifice of bonds and when the fear of the future and falling prices created a preference for cash. Idle cash has a positive real yield on a falling price level. Moreover, it is obvious on rational grounds that in the absence of risk any rate of interest is preferable to none at all and few institutionals have a blind insatiable desire for cash which is likely to seriously impede investment where other factors are propitious. John Bull may not be able to stand 2 per cent, but Uncle Sam has taken a lot less. Thus the rate of interest is determined basically not by monetary factors but by real factors: the supply of real savings and the demand for capital goods which are reflected in the capital market. Any attempt to maintain low interest rates during high employment by increasing the quantity of money will succeed only in the short run and then only by causing inflation. In the long run, such a policy must fail, Prices will rise faster than the quantity of money and interest rates will rise in spite of more money until the process is brought to a halt by a sound money policy or until the value of money is destroyed. The view that interest rates were determined by the quantity of money and liquidity preference had the appearance of truth during depression and stagnation but is of little value for such periods as the present. The doctrine of Hume that in the long run the effect of changes in the quantity of money is on prices and not on interest rates is correct in a stable, high employment, or a growing economy. It appeared incorrect only so long as resources were inadequately utilized. During such a period when prices are expected to fall idle money has a positive real yield and new supplies of cash will be held for this yield or invested in safe securities driving down the interest yield. When, however, psychology changes and prices rise, the yield of idle cash becomes negative and the demand for borrowed funds to purchase real assets also brings up money interest rates.

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The so-called "natural" rate of interest of Wicksell may be defined as the rate of interest that would prevail under full employment at a stable price level. It also follows, from Wicksellian and Keynesian analysis, that a monetary policy resulting in this kind of natural rate is consistent with both price stability and high employment objectives. It also follows that a policy of interest yield stabilization either in the interest of bondholders or the Treasury should remain in the discard. The level of interest rates should reflect the supply and demand for

real resources available for capital formation. Any attempt to achieve a lower rate will be inflationary and ultimately self-annihilating, just as a higher rate will be repressive.)

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Whatever may be the influence of the Federal Reserve on the level of interest rates, the question may be raised whether it is its function to determine the pattern of rates or the structure of rates composed of the differentials between the yields on various maturities of government securities.

During the past few years, the Federal Reserve System has confined its purchases to the short-term market, preferably bills, and has said it will deviate from this policy only if necessary to prevent disorderly conditions in the government bond market. This is in contrast to the practice, ended in 1951, of maintaining an interest rate pattern. Some believe, however, that the Open Market Committee should operate in all sectors of the market and thus affect the prices of all classes of government securities directly by their own bids and offers. The present practice affects only the prices of bills directly, and due to short maturities, these prices fluctuate in a narrow range. However, because Federal Reserve operations determine member bank reserves and the status of reserves affects the buying and selling operations of banks and dealers in all classes and maturities, the whole level of interest rates is indirectly affected by the Federal Reserve.

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The chief factor affecting the pattern of rates is the expectation of changes in interest rates. If, for example, the rate on bills rises, the rate on other government securities will also rise in varying degrees, depending on maturities and the expectation of the permanence of the higher rate. If the rise in the bill rate is expected to be temporary or of moderate duration, longer term securities will decline only slightly. If, at the other extreme, the rise in the bill rate presages a long-run permanent rise in interest rates, continuing into the indefinite future, all bonds will sell off so that the yields to maturities will tend to be quite similar. A  $2\frac{1}{2}$  per cent government, thirty-year maturity, would sell off only a point if an increase in interest rates were expected to last only a few months. But if the interest rate were expected to be say 3 per cent, for the indefinite future, this bond would fall to 90.15.

If the Federal Reserve System were to operate in all sections of the market, it would have to make its own forecasts on the future of interest rates and hence indicate its own future policy. It would then get right back into creating and maintaining an interest rate pattern which it could not alter without being charged with breaking faith. When the System operates only in the bill market, the forecasts on the

duration of cheap or dear money must be made by the buyers and sellers of securities and it is their estimates that determine the pattern of interest rates. They must be willing to suffer the consequences of a mistake in judgment. That is their business. The Federal Reserve System can, however, alter its policies in accordance with its effects on the total economic situation without any obligation to the holders of government securities. This is as it ought to be. Federal Reserve policy will affect the level of interest rates but the structure will be determined by the expectations prevailing in the free market.

#### VT

We have seen thus far that the primary objective of Federal Reserve policy cannot be the maintenance of an appropriate relationship between the bank rate and Wicksell's natural rate or Keynes's marginal efficiency of capital. Nor is it to determine the level of interest rates or the pattern of rates. Interest rates and saving-investment relationships, as we have seen, may be the consequences of operations to control member bank reserves and through them the quantity of money. But these operations must in turn be determined by other objectives. These objectives, briefly put, are high employment and price stability, and the main guides are the indexes of employment, output, and prices.

When reliance can no longer be placed on automatic devices to maintain currency stability, it must be maintained by management. With this there can be no dispute. But the issue arises whether price-level stabilization should be the sole or even main objective of monetary management.

The attitude taken on this question, history shows, depends basically upon our conception of the nature of economic equilibrium. If one holds with the classical economists that the economy is a self-adjusting mechanism producing equilibrium at full employment unless disturbed by monetary factors, it follows that price stability will also provide full employment economic stability: the business cycle is, as Irving Fisher called it, merely "the dance of the dollar"; keep the dollar stable and the business cycle will correct itself. The other view is the one given distinction by Keynes. He held that there is no inherent tendency in the economy toward full employment equilibrium, because the interest mechanism does not automatically equate savings and investment at full employment, and that left to itself the economy might produce an underemployment equilibrium. This equilibrium at less than full employment would be stable enough to persist indefinitely unless corrected by monetary and fiscal policy. It followed from the Keynesian doctrine that cyclical instability required monetary and fiscal action to raise the level of demand and this was elaborated further by the neo-Keynesian stagnationists to require permanent government spending. Briefly, let us designate these two doctrines as those of inherent stability and inherent instability, recognizing that in practice those professing them make many qualifications.

The classical view which has continued to receive support in the writings of Professor Lloyd Mints and his colleagues at Chicago predominated prior to the Great Depression. Then it came into doubt because of the presumed influence of monopolies and rigid prices, wages, and interest rates, which prevented the automatic adjustment of unemployed factors. Keynes went further and held that the whole mechanism of adjustment did not operate as presumed. While recognizing that the adjustment under monopoly is not the same as the one posited by the theory of pure competition, there are many who believe that our economy is still flexible enough to provide "workable competition" and is able to adjust itself to new situations and to absorb all productive factors. Those who adhere to price stabilization as the sole objective of policy also favor restoration of a free and flexible, competitive market. However, if the policy is to be adopted by the Federal Reserve System, it must be applied to the actual, not to the ideal, economic situation, and this is what its proponents intend.

Now if this policy is followed and it produces stable prices, presumably it should also produce full employment. It this is what actually happens, the correctness of the theory will have been established, and there will be no ground for pursuing any other policy. But suppose that prices are kept stable and the gross national product begins to fall anyway? What then should be done? That is the issue faced by the central bank and it does not want to commit itself to take no action in pursuit of the employment objective if that may prove necessary. However, in a period of high employment such as we have had in the past two years, it is the price objective that is paramount in policy even though in theory the governing officials will not accept it as the one and only aim.

What has just been said regarding price stabilization also holds with regard to neutral money. Neutral money theory also assumes an inherent tendency toward full employment equilibrium. This proposal in the form of a fixed quantity of money adjusted for population and growth factors would reduce management to a minimum. If this policy would produce full employment, no other demands would be made on the monetary authorities. But supposing the gross national product falls with neutral money? In that case some would have a fixed MV or a policy of stable incomes, but this in effect abandons the whole concept of automatic equilibrium and neutral money for one of eco-

nomic stabilization in general which is full employment at stable prices.

The Keynesian doctrine stands at the other extreme. It postulates a basic tendency toward underemployment equilibrium calling for varying degrees of governmental action to affect the level of aggregate demand by stimulating consumption and investment. It holds that the tendency toward underemployment is not a monetary phenomenon and that it cannot be corrected by either neutral money or price stability. This defect is inherent in the price mechanism which must rely on the rate of interest to equate savings and investment at full employment. Since, for reasons given by Keynes, the rate of interest does not do this, the economic control mechanism is basically defective and monetary and fiscal policy must be used to overcome the fall in income resulting from the fact that the amount that the community desires to save exceeds the amount that finds outlet in investment.

At the outbreak of the Great Depression, it was the classical doctrine of price adjustment that was relied on. As the depression continued without abatement, disillusion set in, and many economists were willing to believe that their theory of automatic equilibrium was inherently defective. Some on pragmatic grounds and others on theoretical came to endorse large-scale government intervention. After Keynes's General Theory, underemployment equilibrium became accepted as a new truth which supplanted the classical theory of full employment equilibrium.

My own position is intermediate between these two extremes. I recognize that price instability can be one of the causes of economic instability, but I am not willing to concede it to be the only cause. There is a basic tendency toward full employment equilibrium in our economic life for the simple reason that those owning unemployed productive factors will make adjustments to put them back to work. However, experience has shown that these efforts may not be successful in the short run and can be supplanted by other recovery means provided by monetary and fiscal policy. I believe, furthermore, that the conception of equilibrium must encompass both the classical price equilibrium and the Keynesian equilibrium of the aggregates which may be dependent in part upon the distribution of income and assets in the community and their disposition for consumption, savings, and investment.

On the other hand, I believe the theoretical position of Keynesian economics asserting underemployment equilibrium to be basically an error, and that by denying or neglecting the incentives toward self-adjustment inherent in the economy, that it leads to erroneous policies. If fully accepted, it might substitute government spending for private spending and reduce by so much the incentives to adjustment in the

private sector of the economy. Historically, of course, Keynes's theories were a justification of his policies and we can accept the policies as appropriate to the Great Depression without however accepting the theoretical structure used to justify them.

Under the postulates of automatic equilibrium and stable prices, the Federal Reserve System is a money manager. If it makes money behave, all will be well. Under the Keynesian theory, the monetary and fiscal authorities must use money as an instrument of economic stabilization in general, to manage output, employment, and prices through control of interest rates, saving, and investment. The central bankers become not merely money managers but managers of the economy.

I do not believe that we must accept either the classical theory of complete automatic self-adjustment or the Keynesian theory of permanent underemployment equilibrium. We can assume, rather, that the forces of adjustment envisaged by the traditional economics are still operative and that self-interest will tend to produce full utilization of resources without blinding ourselves to the fact that this mechanism does not work perfectly. But to say it fails to work perfectly is not to say that it does not work at all. Neither classical automatic full employment equilibrium nor Keynesian underemployment equilibrium can be substantiated either factually or theoretically. While it would be erroneous not to recognize the powerful forces at work to bring about corrective adjustments, it would be foolhardy to rely blindly upon such forces in view of large changes in the aggregates which might be compensated for by monetary and fiscal policy. Guaranteed full employment would, however, destroy incentives to self-adjustment and provide an engine of continuous inflation.1

Since 1951 we have relied predominantly on the classical rolling adjustment. It is a matter of judgment, not of elemental faith, how far, in a given situation, we can wait on the free market to produce the price adjustments necessary to keep the economy functioning. The fearful ones, still harboring the virus of stagnationism, have been anxious for governmental intervention at every dip during the postwar period. The more hopeful have relied on business and industry to produce full use of resources. Among theoreticians there may still be differences regarding the ultimate causes of the cycle and the place of classical and Keynesian theory in its explanation, but practitioners of the art of monetary and fiscal policy are primarily concerned with judgments regarding the weight and tendencies of various forces in the

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<sup>&</sup>lt;sup>1</sup>I have discussed this more fully in my "Trade Unionism, Full Employment and Inflation," American Economic Review, March, 1950, and in "Keynesianism and Inflation," Journal of Political Economy, June, 1951, pp. 258-265.

economy and their effects. Policy differences accordingly reflect varying judgments concerning where we are and whither we are tending which, I am told, will be avoided only when the electronic brain ultimately takes over for the more fallible human variety.

### VII

The real difficulty of monetary policy arises from the conflict between the twin objectives of full employment and price stability. Is it necessary to sacrifice one for the other? And if so, which? Although this problem was presented in sharp outlines since the implications of Keynesianism have come under critical scrutiny, it is an old problem posed in a new situation.

In price theory, the tendency of prices to rise before or at full employment is attributed to monoply, rigidities, and other imperfections in the market. One of the most pervasive of these is the labor union which is ever pressing for higher money wages, presumably in excess of the growth of productivity. Since these requests cannot be successfully resisted at high employment levels, they create higher costs and higher prices. If the monetary authority does not create the volume of money necessary to conduct business on the higher price level, prices, output, and employment will fall. If it does, it abets inflation. Which evil shall it choose?

I do not believe that this manner of stating the problem is correct or fair to the monetary authority. For it puts into the public mind that there is a real choice between inflation and full employment when in fact no such choice really exists. The central bank cannot choose to make inflation a permanent policy without setting into motion forces that will ultimately destroy the currency. It cannot choose it as a temporary policy without at some future time creating a crisis by bringing the inflation to an end and thereby promoting the very depression that it sought to avoid. Ultimately it is not inflation or unemployment but inflation and unemployment. A monetary concession to inflation is the harbinger of future unemployment.

This is, however, denied by those who believe it possible to have a gradual inflation of a few per cent per year. But since wage contracts now also contain escalator clauses, they become self-inflammatory and promote more inflation. Planned gradual inflation, I have said before, is a contradiction because a predictable event can be discounted and what would have been a gradual movement will become an immediate fact. Inflation might be gradual in spite of the monetary authority, but if the monetary authority sanctions or promotes it, the inflation will become immediate and also much greater than planned.

Price and cost inflation during prosperity is not the product of re-

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cent times; it is found quite generally in business annals. Since the Federal Reserve System we had hoped to maintain the boom without the inflation and during the twenties appeared to have accomplished it. But in 1936-37, rising prices while millions remained unemployed created the suspicion that this was impossible. Inflation then was attributed to bottlenecks: trade-unionism and monopoly. Some held that capacity was so inadequate that real variable costs necessarily rose with high employment due to utilization of inferior resources. However, the bulk of evidence tends to show that marginal variable costs do not rise in manufacturing during periods of high employment and that average total costs fall. In manufacturing industry there is moreover no inherent reason, such as diminishing returns, why real costs and prices should rise with full resource utilization. However, money costs would rise if wages were increased faster than productivity.

During the thirties it seemed that the level of employment was dependent upon governmental spending. Since inflation came with high employment, it was contended that government should cease to promote full employment when the level of unemployment fell to, say, four million. At this level, some believed, unions would not press for higher wages, and if they did, they would be ineffective. It was accordingly contended that price stability required a reserve army of the unemployed. Just how this conclusion was arrived at is not clear. It rested partly on empirical grounds, although the rising wage demands in 1937 came when there were still many million men out of work. It must rest on the view that unionism becomes ineffective with several million potential job competitors. I do not believe this view has much validity. Those who remain in work will continue to ask for higher wages, and, under the full employment guarantee of the neo-Keynesians, would still be assured of further government job-making activities should their wage demands create unemployment above the specified level. Union members possessing seniority rights to jobs do not abate their own demands because of the effects on junior jobholders or the unemployed. The unemployed would not be willing or able to break the union and they would have to be fed, housed, and clothed at public expense—without contributing to output, a further inflationary force.

The function of the reserve army of the unemployed, according to Marx, was to maintain the rate of profit; according to the neo-Keynesians its function is to maintain price stability. Both are mistaken. This policy is not necessary for profits and it will not maintain price stability. It would also be immoral and politically suicidal. Much better is the position of orthodox neoclassicism that unemployment or-

dinarily arises from the failure of worker and employer to adjust their wages and prices to market demand. This places the responsibility where it must rest in a free enterprise economy.

The maintenance of the unemployed margin has, however, not been proposed as a deliberate policy when the market forces themselves provide full employment. This is the normal prosperity problem. Under these circumstances it is the function of the Federal Reserve System to maintain price stability. It is not their function to deliberately create an unemployed margin. They have never subscribed to this theory and they never should. Violent measures might put an end both to inflation and to prosperity but the Federal Reserve seeks to contain the inflation without impairing real output and employment.

It is, of course, true that the whole problem would disappear if unions would voluntarily relinquish their claims to higher wages out of a sense of social responsibility. This has been suggested again and again during the past decade but has fallen on deaf ears. Union leaders and their followers will continue to get what they can and no argument of public interest can dissuade them. They can always use the purchasing power argument of prosperity and the contention that profits are too high. In collective bargaining it is the resistance of the employer and not a sacrificial spirit on the part of the worker that keeps wages in line with the prices of output. It is these forces that we must continue to depend upon in the future. Union leadership will be reasonable when the employer himself finds that he must function within the ambit of a limited quantity of money, and should union leadership become irresponsible, it will have to pay the price in unemployment.

Once the expectation of stability in the value of money is destroyed many changes will occur in our society. Bonds will be less in demand. Insurance companies will issue variable annuities. Pension funds will buy common stocks. Then, of course, interest rates on bonds will rise as the volume of available bond money is diminished. If interest rates effectively discount the inflation, borrowing will become unprofitable unless the inflation will in fact be greater than was anticipated. And so it will have to be whenever we give up the policy of price stabilization. Wage agreements promoting inflation will contain escalator clauses that inflame it further. The logical end of a truly inflationary state would be the demise of long-term debt and the growth of equity securities.

The contention that trade-unionism, full employment, and stable dollar could not live together in the same house has been made continuously since the close of the war. Yet we have had a high level of employment in a growing economy at a stable price level since the Korean war. This has been accomplished without price or wage control, in spite of heavy government spending, without an army of the unemployed, and without the purportedly necessary moral transfiguration that would have produced a new sense of social responsibility on the part of labor and management.

We now have a high level of prosperity and the Federal Reserve System is using its powers to preserve the value of money. This is as it should be. Once the central banker pulls down his standard and retreats, the mob will be at his heels crying for more inflation to prevent prosperity from coming to an end. It is better that the expectations of society be adjusted to a stable monetary unit. I would not have much faith in a central bank which failed to resist the forces threatening the stability of the monetary unit in the hope that moral suasion would induce the economic forces of a free society to sacrifice their own interest for the public good, or in the pessimistic expectation that prosperity will be self-annihilating. All of our institutions and policies should be so organized that the free citizen acting in his own economic interest will also be serving the public good.

The Federal Reserve System is a creature of Congress and can defend the dollar only so long as it has legislative support in both monetary and fiscal policy. Central bankers must continuously assay the strength of economic forces and sooner or later they may be mistaken, but the record shows that since the Federal Reserve System has been free to follow its own course, it has shown superior judgment and a high sense of responsibility. The conflict between inflation and stability is more like guerrilla warfare than an open battle. Even the fainthearted may espouse a good cause and do battle when victory is assured, but it takes courage to mount the ramparts when the outcome is in doubt. And here the will to battle is already half the victory.

A gradual inflation may ultimately dominate us against our will, but it will be gradual instead of headlong only because we have the will to resist it. For it is the fight for stability that injects the element of uncertainty which impedes the inflationary process. I grant the possibility that the forces of inflation may be too powerful to defeat. But it is better to go down fighting than to run up the white flag of surrender.

#### DISCUSSION

Bernard W. Dempsey: Professor Morton is to be congratulated on not hesitating to raise fundamental analytical issues. The Reserve Board is constantly confronted with pragmatic situations in which decisions must be made even though all the data desirable are not at hand. This practical necessity does not absolve the economist of his responsibility to find clear-cut criteria for policy in those cases where the structure of the situation is less confused.

I hope that you will excuse what might sound like a piece of recherché pedantry but which in my opinion is not. Professor Morton deals sympathetically and respectfully with Wicksell's natural rate of interest but nonetheless rejects it as an operational concept or policy criterion. Now as a matter of fact there is in Wicksell's system no rate of interest that deserves to be called natural and none which Wicksell called natural. There is a rate of natural interest which is the result of productivity, the degree of absorption of innovations, the rate of real saving, and all the other things which economists commonly regard as the foundations of real interest.

When the rate of money interest expresses this underlying set of facts (or "originary" facts as Wicksell calls it), then this rate of money interest does not affect prices. And this rate of money interest is the normal rate—the only rate to which Wicksell applied an adjective.

The rate of natural interest is that rate which would prevail if goods were lent *in natura*, that is, in their natural state, which accounts for the name. As a monetary phenomenon the net product of capital goods of all sorts could be measured in money terms only after the fact when the net product is expressed in some price structure. In itself, natural interest is a conglomeration of bushels and barrels and tons and yards and gallons that can only be approximated through an average of index numbers.

But natural interest is the "originary" fact and one that cannot be escaped; thus when Professor Morton says that "the effectiveness of monetary policy must be measured by the behavior of price and production indexes, not by interest rates," he is not avoiding natural interest but turning the problem around to make a new approach to it. Similarly his central proposition that "these objectives briefly put are high employment and price stability and the main guides are the indexes of employment, output, and prices" can be tidily interpreted as a summary of Wicksell's natural interest.

Also in the rejection of Wicksell, Professor Morton states that "the theory appears to present us with an equilibrium between two quantities when in fact it presents us only with an equilibrium between two expectations neither of which is subject to measurement precise enough for the determination of monetary policy." The rate of natural interest is the fact which businessmen must and do appraise in determining their willingness to borrow; i.e., the demand for funds. Central bankers are limited human beings just as businessmen and there seems to be no reason why they should require any source of in-

formation, denied to businessmen, in their deliberations to determine the supply of funds. Calling business decisions expectations merely emphasizes the obvious fact that only the future will reveal exactly how wise the decisions are. It does not rob the decisions of their objective basis in current economic fact which must suffice for both business policy and monetary policy.

Wicksell likewise in his exposition put his finger on the reason why in a modern credit economy departures from the normal rate are so easy. If productive goods were lent and borrowed in natura (in their natural state), there is a palpable limit to what could be lent and borrowed. But in a credit economy, money is lent and borrowed; then goods are bought and sold. Both in an economy in which goods are lent in natura and in a modern credit economy capital goods have a cost of production and therefore a limit on supply in any given length of time. But credit money has a negligible cost of production and no practical limit to the supply. Therefore, there is no limit to which prices cannot be forced by bidding with borrowed funds.

The rate of interest therefore deserves more attention as a determinant of the money supply than it receives. This statement is quite consistent with Professor Morton's quotation from Hume.

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As to Professor Morton's rejection of Keynes's analysis, little needs to be added. If Keynes had started his analysis from equilibrium instead of from depression, it would have been quite clear that his remedy for the problem was simply more of the cause of the problem.

We may also note that one may on occasion use Keynesian policies without accepting Keynesian principles, much less accept them as a "general theory." There are forms of diabetic shock which call for an injection of glucose. One may employ such tactics without believing that sugar is good for diabetics, that shots in the arm are the normal way of taking food, that we should not try to learn how to cure it, or that the principles of hygiene may be safely ignored in general.

Our present problem in America is that the Keynesian program of reducing wages by inflation required the successful hoodwinking of the unions by the central banking authority. This apparently our Federal Reserve has not succeeded in doing. This does not necessarily imply criticism of the Board of Governors.

Professor Morton states that "it is not the function of the Federal Reserve to be concerned about the rate of interest as a distributional factor." There is doubtless some jejune Clarkian sense in which this is true. But Professor Morton states, also—and I think much more judiciously—that "the concept must encompass both the classical price equilibrium and the Keynesian equilibrium of aggregates, which may be dependent in part upon the distribution of income and assets in the community and their disposition for consumption, savings, and investment."

A monetary authority in the short run may assume that income distribution has not changed. But it should never lose sight of the fact that a certain income distribution is the point of departure for every policy move and a different income distribution is the end result of every policy. Loans do not spend themselves and borrowers are engaged precisely in changing the time

shape of their income. In an economy where money with no cost of production bids for goods which do have costs of production, it is precisely through this shift in income distribution that changes in the money supply transmit themselves to the price structure. And if the benefits of saving are put at the disposal of borrowers when there has been no saving, the effect on the income distribution is notable. The function of the rate of interest as a distributional factor is by no means limited to the sums of money—labeled interest—and paid to bondholders.

In crude hyperinflation, it becomes clear that the benefits of saving are swept to those who have not saved. I have always had a suspicion that the supposed cynicism and intransigeance of labor in demanding wage increases early in an inflationary process are rooted in a vague intuition that the loan process by which loans are made at one price level and easily repaid at a higher one somehow takes something out of their pockets and they better get in early. And as so often happens the intuitions of plain people are correct.

Minute changes in the rate of interest as a distributional share may not concern the Board of Governors. Interest as a factor in income distribution cannot be ignored.

We are accustomed to regard wages as a major factor in income distribution and we are quite used to adjusting money wages by correction with a relevant price index. We could correct interest income in the same way and arrive at a real interest rate analogous to a rate of real wages. The important difference between the two is this: Changes in the rate of wages (real or money) are the result of economic factors and we measure them after the fact. We should be able to do the same thing with money interest, correct it with the appropriate price index and have a measure of real interest or, if you will, of natural interest. But the reason we cannot do this is radical. The rate of wages does not have any direct effect on the money supply which determines its monetary expression. The rate of interest is the principal factor in determining its monetary expression.

The central problem of monetary policy in the United States today presents itself in this fashion. Unemployment develops in one industry or in one locality. Is this an isolated phenomenon due to specific causes? Is it due to mismanagement, failure to adjust to change, or some similar factor present in this industry alone? Or is it the first sign of general weakness? Is it the beginning of a cumulative movement that is bound to communicate itself and spread? It is imperative that the Board make a correct decision on these matters every time.

This can be a difficult decision to make at any time. But it is easiest to make when there has been no monetary pressure on prices and management has been carefully attending to costs without counting on rising prices to obscure their errors. Such a decision is hardest to make after a period of low interest rates and monetary pressures on the price structure. At such a time the demand will be made for more inflation and the monetary authority will inevitably be urged to underwrite business errors however conspicuous and produce a price structure high enough to cover any costs however unwisely incurred; i.e., pro-

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viding money to buy some product people did not want to buy at the old price relation.

This is said in support of Professor Morton's observations on the effect of a Keynesian policy to "reduce" or "destroy" incentives for self-adjustment. Adherence to a Wicksellian policy properly understood maintains these incentives at a maximum.

Finally, is the dilemma between price stability and employment stability as real in a dynamic economy as it is in an unprogressive one? In an economy which is continuously adjusting to technological change and technological unemployment, is the danger of price rigidity as great as we have been led to believe?

KARL R. BOPP: I should like to state at the outset that I agree with Professor Morton's view that general monetary policy is a necessary but by no means a sufficient condition "to maintain a high level of economic opportunity." Perhaps, therefore, I can contribute most to this session not by emphasizing our differences—some of which I feel sure are more semantic than real—but by paralleling his discussion with brief comments on the view that recent institutional developments have changed fundamentally and essentially the role of general monetary policy.

It is still commonly recognized, of course, that commercial banks are unique in that their demand deposits are money. But the question has been raised as to whether the base on which the central bank operates has become too small for effective action because of the rapid development of other types of financial institutions that compete with commercial banks in many ways.

A common approach to the problem runs as follows: The monetary authorities regulate the amount of reserves available to the commercial banks. Commercial banks adjust their lending and investing activities to their reserve positions and thus influence the amount of deposit money. When reserves are tight in a period of restraint, banks will limit their lending by charging more and by screening applications more rigorously. If, now, banks are the only source of credit open to the borrower, the restraining monetary policy can be effective. If, on the other hand, the borrower can turn to other sources, the influence of the monetary authorities is dissipated.

Some observers have concluded from the analysis that runs in these terms that the monetary authorities should be given regulatory power over other financial institutions in order to restore their effectiveness. I agree that such regulations could affect the competitive positions and the relative profitability of financial institutions as well as the allocation of credit among competing users. I agree, also, that the differential impact of general monetary policy is important and has become a matter of increasing concern.

I do not have time to discuss this aspect of the problem. But I would like to point out that one consequence of the institutional developments of recent decades is that both borrowers and lenders have more options. A man who wishes to finance the purchase of a house or of an automobile can apply at several different types of institutions. Alternatively, one who wishes to save in liquid forms has numerous options. Banks and other institutional lenders

in turn may lend to consumers, to home owners, to business firms, and others. Is it not reasonable to suppose that as the number of options increases—as the network of credit contacts becomes more elaborate—the influence of the monetary authorities permeates the economy more thoroughly and more quickly? Incidentally, does not the widespread ownership of the federal debt operate in the same direction? Does not the credit market become more fluid and does not the burden of distributing credit fall more on price and less on administration or rationing?

This brings me back to the question of whether regulation of other financial institutions would make over-all monetary policy significantly more effective. One suggestion is that other financial institutions be required to maintain minimum cash reserves.

Presumably, to exercise restraint, the minimum requirements would be set above the actual reserves. Where would the additional cash come from? Since there is no inherent reason why the assets of such institutions would increase automatically by the appropriate amounts, the institutions would have to borrow or liquidate non-cash assets. Either would tighten the money market. If that is the purpose, it can be achieved under existing institutional arrangements. If it is not the purpose, what general monetary results would be achieved by the new regulations? Perhaps I have a blind spot, but I cannot trace the links in the mechanism by which even detailed regulation of all financial institutions by the monetary authorities would resolve the dilemma between unemployment and inflation that Professor Morton poses.

This is not, of course, the first time that observers have remarked about a developing impotence of a central bank. Often enough, incidentally, the remarks were based on growing competition of other lenders who presumably escaped control. To be sure, in some episodes, it was competition of commercial banks with the central bank rather than between nonbank and bank lenders. But the essential core of the problem has been the same.

Our Chairman, Professor Wood, has analyzed the experience of the Bank of England during the nineteenth century. The question then was whether the commercial banks could escape the control of the Bank of England by reducing their reserve proportions. He concludes that they could not because, as he puts it, "at no time down to 1913 were the total private securities of the Bank unmanageably small in relation to total bankers' cash. Whether the banks, therefore, chose to adjust their reserve proportions at 8 per cent or 15 per cent, the terms of the Bank had to be met."

I have analyzed the experience of the Reichsbank during the period 1876 to 1914 with similar results. During the first half of the period the complaint was that the banks with limited powers to issue notes could nullify the powers of the Reichsbank, and during the second half it was that the commercial banks could do so. The German commercial banks did not observe any legal or customary relationships between their reserves and their deposits. Nevertheless, whatever reserves they wished to keep had to be secured from the Reichsbank whose earning assets were always much larger than total cash assets of the commercial banks. In short, the Reichsbank like the Bank of England could influence powerfully the terms and conditions under which

banks could adjust their reserves. The Reichsbank was also able to influence the terms and conditions under which certain other borrowers acquired cash directly since it was a large commercial bank as well as a central bank. It was through these powers that the Bank of England and the Reichsbank were able to influence the attractiveness of cash relative to debt assets on the one hand and real assets on the other, and thereby achieve their purposes.

I have cited these two cases because it seems to me that they contain elements that are relevant to our own problems. May we not also be exaggerating the newly developed ability and willingness of the private nonbanking sector to nullify the intentions of the monetary authorities? What we have witnessed is a great increase in the availability of partial substitutes for cash. This development has reduced the need of the public for deposit balances. The significant matters from the point of view of monetary control, however, are (1) that whatever amount of cash balances the public needs it must obtain under conditions greatly influenced by the monetary authorities and (2) that these conditions, or the attractiveness of cash relative to debt assets on the one hand and real assets on the other, influence the flow of expenditures and thus the general level of economic activity.

My conclusion that the tools of central banks have not been blunted seriously by the developments I have described should not be misinterpreted to mean that I think monetary policy alone can assure us of high levels of employment at a stable level of prices. Nor do I wish to leave the impression that central banking is easy. I may have believed that when I left teaching to become a practitioner. I do not any more.

SAMUEL I. Katz: Professor Deutsch's paper is a rounded and an informed survey of recent Canadian monetary developments and Treasury policies. For this reason, I do not wish to dwell on the possibility of a different emphasis on minor points; on the contrary, it would be more fitting for me to begin by thanking him on behalf of all of us—the specialist and the general economist alike—for his authoritative discussion of the relationship between monetary and fiscal policy in Canada in the postwar period. I have decided, rather, to try to supplement his paper by calling attention to an area which he as a Canadian was perhaps too modest to emphasize: the recent institutional development in Canada which has helped so much to make monetary policy what Professor Deutsch has called "the dominant means for the preservation of financial stability" during the last few years.

Back in 1951, during the post-Korean inflation, Canada set up a voluntary credit restraint program somewhat similar to the measures taken in the United States. To check the expansion in credit, the chartered banks agreed with the central bank in February, 1951, that "further expansion in total bank credit was undesirable under existing circumstances." Under this agreement, there was no increase in bank loans after March, 1951, even though the banks had unused commitments under established lines of credits.

The imposition of this voluntary credit ceiling was looked upon as a temporary expedient. In May, 1952, the Bank of Canada terminated the program,

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"leaving normal methods of central bank action to influence the level of total bank credit." (Annual Report, 1952, Bank of Canada, page 8.)

What this episode helped to make clear was the undeveloped character of central banking arrangements in Canada, particularly in three areas: (1) There were no effective reserve requirements set by the monetary authorities; the statutory requirement was 5 per cent, but the banks traditionally kept a reserve of at least 10 per cent. (2) There was no short-term money market in Canada. In the case of Treasury bills, the banks made sales directly to the Bank of Canada when they needed funds, and the Bank stood ready to purchase them regardless of its policy at the moment. Treasury bill holdings outside the banking system were very small indeed. In addition, there were no supplies of private short-term commercial paper. (3) Finally, discount rate was not considered an important instrument for influencing the volume of credit. In fact, the Bank of Canada had stated in 1944 that "it did not then see any prospect of an economic situation in the post-war period of a character which would call for a policy of raising interest rates."

This was the situation in 1952; less than five years later, at the end of 1956, unprecedented progress has been made in all three of these areas. Let me briefly review these developments:

Reserve Requirements. The Bank Act of 1954 permitted the central bank to establish reserve requirements within a range of 8 to 12 per cent. During the period of monetary ease in 1954 and early 1955, the banks allowed their reserves to fall below the traditional 10 to 11 per cent and by the end of 1955 their reserve ratios were near the 8 per cent minimum in effect. As a result, the Bank of Canada can now expect a quicker reaction by the banks to pressure on reserves than had previously been the case.

Establishment of a Short-term Money Market. The authorities took a number of undramatic steps, highly technical in nature, which have resulted in the development of a short-term money market of growing depth and resilience. The Treasury bill market was broadened to include dealers and non-bank investors, and a day-to-day loan market between security dealers and the banks was established. A couple of figures will illustrate this development of the Treasury bill market: back in 1952, nonbank holdings of Treasury bills amounted to about 27 million dollars; in July, 1954, they totaled 103 million; in April, 1956, they reached a record peak of 582 million. At the same time, a market in short-term commerical paper has also developed; in early 1956, outstanding commercial paper of the sales-finance companies probably exceeded 200 million dollars and there may well have been a further substantial growth during 1956. The existence of this short-term money market has made possible a more flexible and active use of monetary techniques in the pursuit of economic stabilization.

Use of Discount Rate. Finally, the Canadian authorities have made much more use of discount rate recently; during 1955 and 1956, for example, Bank rate was changed seven times compared to three changes in the preceding twenty years. This recent active use of Bank rate has been an integral part of the "increasingly vigorous exercise of monetary policy" which Professor Deutsch has surveyed for us.

These measures, which are traditional in character, have been supplemented by two innovations in recent months. At the end of 1955, the Canadian authorities introduced a 15 per cent liquidity ratio as a supplementary reserve requirement. Much more novel was the experiment anounced last month when the Bank of Canada introduced for the first time in the history of central banking a "floating" Bank rate; that is to say, Bank rate is set at ¼ of 1 per cent above the latest weekly average tender for 91-day Treasury bills. Thus, Bank rate changes every week, and automatically, when the Treasury bill rate is announced.

This broadening of market facilities and these banking developments in Canada since 1952 have been an outgrowth of imaginative attempts to provide the technical basis for more flexible credit policies. The institutional growth may well be as permanent for Canada as its new factories and oil wells and may, in my view, be as important to the country's long-run development. It also seems to me that it marks a further—and perhaps a culminating—stage in the institutional growth of the Canadian monetary and credit system—a growth paralleling the transformation of Canada from a producer of a few primary products to an important industrial power in the free world.

# PRICE AND COMPETITIVE ASPECTS OF THE DISTRIBUTIVE TRADES

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## THEORETICAL IMPLICATIONS OF EMPIRICAL RESEARCH ON RETAIL PRICING\*

By STANLEY C. HOLLANDER University of Pennsylvania

This paper seeks to suggest that economists may find retail stores useful for many purposes besides storing famous "empty boxes." It will note, very briefly, the quantitative significance of retailing and retail pricing in the total economy; and rather less briefly, the particular merits of retailing as an empiric laboratory. In hinting at the theoretical opportunities in the study of retail prices it will note, as evidence of the kinds of work being done, some of the contributions offered by some of the few researchers who have worked in the area. It is neither an exhaustive nor a critical survey, however, and it will present few conclusions. If it suggests some thesis topics or research projects it will have accomplished its aim.

The role of retailing in the total economy needs little elaboration. Harold Barger estimates that retail margins (or the value added by retailers) approximated 30 per cent of the total price of all goods retailed in 1948 (Distribution's Place in the American Economy, Princeton University Press, 1955, page 60). Retail firms constituted about 40 per cent of all firms in the United States in 1954 and employed a labor force of almost eight million (Statistical Abstract of the United States, 1956, pages 202, 485). Clearly, an explanation of pricing in this segment will contribute significantly to an over-all explanation of price formation.

More attention, however, must be devoted to the role of retailing as a laboratory in which to study general theories of pricing. The important questions are whether retail prices are formed in ways that approximate general price behavior; and whether retail prices are easier or more difficult to study than other prices.

If retail prices are formed by pure chance or by whimsy while other prices are the result of rational interactions, then retailing is a special case, of little interest to the general theorist. But common observation tells us that retail prices do not follow pure chance distributions and are patterned in some more specific fashion. George Zipf has subjected

<sup>\*</sup>The author wishes to express appreciation to Professors Irving Kravis and Ralph Breyer for their courtesy and help in reading and commenting on a draft of this paper.

the common observation to sophisticated test in the case of one large retailer and has noted the existence of pronounced regularities. Cassady has noted, as a result of a very careful study of gasoline retailing, that pricing practices can be at least partially explained by a Masonian analysis: "Given a particular group of market factors—a certain supplier's product, a certain retail location, a certain station lavout, a certain standard of cleanliness, a certain number and type of competitive sellers, etc.—the method of competition to be stressed is at least partially predetermined, assuming that profitability is the desired end. '72

Cassady's last clause—"assuming that profitability is the desired end"—leads to the question of motivation on both sides of the transaction. This paper will not attempt to explore the debate over the value of studying motives; it simply asks whether or not the retailer and his customer are or are not economic men.

Unfortunately, even less attention has been devoted to the question of managerial goals and concepts in retailing than is true of manufacturing enterprise. Hall's and Hitch's study included only three retail firms,3 and many interesting similar studies have been limited entirely to manufacturing. However, E. R. Hawkins has shown that various retail pricing practices often cited in criticism of received economic doctrine, such as odd pricing, psychological pricing, and prestige pricing, are entirely consistent with marginal analysis and the assumption of profit maximization, provided the retailer holds certain views as to the shape of the demand curve ("Price Policy and Theory," Journal of Marketing, January, 1954, pages 233-240). A National Retail Dry Goods Association survey (The Right Price, 1948, pages v, vi) reported that N.R.D.G.A. members (heavy users of price-lining techniques) overwhelmingly believed consumer demand centered at the price points used. A suggestive, even if certainly not conclusive, test of grocery retailers' reliance on demand curve assumptions was conducted by W. A. Lee and L. E. Fouraker. Noting that, while retail dollar margins on perishable foods tended to be low when wholesale prices were low and high when wholesale prices were high, percentage margins behaved in exactly contrary fashion, they hypothesized that retailers must anticipate less variation in physical sales volume for a

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<sup>&</sup>lt;sup>1</sup>Thus, "the x number of different kinds of items offered with the same y-price in class intervals of 25¢ tends to be inversely proportional to y<sup>2</sup>." "Quantitative Analysis of Sears, Roebuck and Company's Catalogue," Journal of Marketing, July, 1950, p. 13.

<sup>2</sup> Ralph Cassady, Jr., Price Making and Price Behavior in the Petroleum Industry (Yale University Press, 1954), pp. 240-241. J. B. Dirlam and A. E. Kahn, "Leadership and Conflict in the Pricing of Gasoline," Yale Law Journal, June-July, 1952, also found it possible to identify price-making factors in the retail gasoline market.

<sup>2</sup> "Price Theory and Business Behaviour," Oxford Economic Papers, May, 1939, pp.

given absolute variation in retail price during high price periods than during low periods. Depth interviews with pricing executives in five retail organizations confirmed the hypothesis. ("Profit Maximization and Margins in the Marketing of Perishables," Journal of Marketing, October, 1955, pages 171-173,) Actual behavior and market-view coincided under a maximization motive.

While we certainly can find homo oeconomicus in at least some retailers' family trees, leading them to pursue fairly rational procedures towards their goals (be they short- or long-run profit maximization, survival or expansion, dominance, prestige or security), a knottier question arises with regard to customers. This is not the place to explore the voluminous literature on consumer behavior. 4 Suffice it to say that at least some studies of retail prices and sales seem to indicate that at least some consumers will switch from high-priced gasoline stations to low-priced ones, that at least some consumers seem able to evaluate, fairly realistically, the variations in services and prices between full price and discount vendors; "that [at least some] consumers are interested in price relationships between competing commodities and very likely will shift part of their patronage from items whose price is unchanged to those offered at a bargain"; and that at least some high-income consumers will retain the same interest in supermarket convenience and economy manifested by lower income consumers.8

In any event, both retailers and their customers exhibit enough signs of rationality and consistency to warrant study. The next point to be noted is that retail pricing has special advantages as an economical laboratory for the empirical investigator.

1. The heterogeneity of American retailing facilitates as well as complicates research by providing a laboratory in which pricing can be studied under a host of different conditions. Several writers, such as Oswald Knauth and Henry Smith, have suggested that theory. analysis, and operations can be forwarded through classification of retailers, on such bases as range of products sold, size of average purchase, and range of customers sought.9

<sup>&</sup>lt;sup>4</sup> Cf. Ralph B. Bristol, Jr., "Bibliography of Consumer Behavior," in Lincoln Clark (ed.), Consumer Behavior, Vol. I (New York University Press, 1954).

<sup>5</sup> Lincoln Clark, "The Elasticity of Demand for Tennessee Gasoline," Journal of Market-

ing, April, 1951.

Claire M. Gross, "Services Offered by Discount Houses in Metropolitan New York,"

Journal of Retailing, Spring, 1956.

Roswell H. Whitman, "Demand Functions for Merchandise at Retail," in Oscar Lange, et al. (ed.), Studies in Mathematical Economics and Econometrics in Honor of Henry Schultz (University of Chicago Press, 1942).

\* Richard Holton, The Supply and Demand Situation of Food Retailing, A Case Study

<sup>(</sup>Harvard University Studies in the Marketing of Farm Products, No. 10-H, Cambridge),

<sup>&</sup>quot;Considerations in the Setting of Retail Prices," Journal of Marketing, July, 1949, and Retail Distribution (London: Oxford University Press, 1937), respectively.

Perhaps the most commonly noted variations are those relating to store and firm size. The retail industry includes both pygmies and giants; and as the Census Bureau has pointed out, the investigator can profit from this diversity through the use of properly stratified samples.10

Variations in internal organizational structure, to some extent associated with variations in size, may also have interesting implications for price analysis. Chains, for example, vary in the extent to which they delegate price-making authority to individual store managers, and this seems to influence their competitive position vis-à-vis local sellers. 11 Red tape and routines hampering subordinates may also affect action. Thus, in spite of a presumed desire for a favorable showing, department managers in department stores may be deterred from making needed price adjustments by the elaborate and detailed procedures set up for the control of markdowns. 12 On the other hand, there is abundant evidence that in some discount houses, automobile lots, and furniture stores, where the proprietor or a subordinate with strong price-making authority waits upon the customer, price adjustments may be taken as necessary, even to avoid losing a single sale.<sup>13</sup>

While evidence of acquisitive motivation in retailing has already been noted, we must recognize the possibility of motivational variation between segments. Vigorously expanding retailers, such as the blossoming regional food chains, may pursue different aims and make different pricing decisions than well-entrenched static organizations. Small dealers may seek different goals from large merchants. Small custom furriers see security in the possessions of skills and the possession of money, according to one study, while furriers operating on a large scale, like Reisman's other-directed man, are customer oriented and see security in good business reputation.<sup>14</sup> Sidney Pollard and J. D. Hughes ingeniously manipulated British census data on annual sales, margins and payrolls to conclude that working proprietors "look to their shops for a net income which they are trying to maximise without assigning it to different sources . . . the working proprietors may fail to

<sup>&</sup>lt;sup>10</sup> The Sample Survey of Retail Stores, A Report on Methodology (Bureau of the Census

Technical Papers No. 1, 1953).

11 Report of the Federal Trade Commission Relative to Chain Store Price Policies (Senate Document No. 85, 73d Cong., 2d Sess., 1934), p. 108. No indication is given, however, as to whether the variations in price result from differences in motivation or from mere flexibility.

<sup>&</sup>lt;sup>12</sup> R. M. Alt, "Department Store Price Policies" (unpublished Ph.D. dissertation, Har-

vard University, 1946).

<sup>13</sup> Cf. Irene Till, "The Fiction of the Quoted Price," Law and Contemporary Problems, June, 1937; S. C. Hollander, "The 'One-Price' System, Fact or Fiction?" Journal of Retailing, Fall, 1955.

<sup>&</sup>lt;sup>14</sup> Louis Kriesberg, "The Retail Furrier, Concepts of Security and Success," American Journal of Sociology, March, 1952. Kriesberg did not explore the pricing implications of these varying views.

look to the sum of profits plus salaries of their trade and turnover. which owners and managers as separate individuals would demand, and pitch their expectations for the combined income lower than the latter." ("A Note on Managerial Incomes in Retail Distribution," Manchester School, January, 1956, pages 68-76.)

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Many other variations can be noted. Ownership conditions range from variety stores, where chains do about 85 per cent of the business, to florists and automobile dealers, where chains probably do less than 10 per cent. Variations in functions performed, products carried, amenities offered, markets served, and competitors faced probably are equally wide. The degree of subordination to manufacturers or wholesalers, the cohesiveness of trade organizations, and the conditions and rates of entry and mortality also vary greatly. We will note later some conflicting opinions as to the variety of cost curves presented by retailing.

Not all of these variables lend themselves to quantitative analysis. Nor can any one study, within usual budgetary and time restrictions, study all factors. But in many cases, interrelationships and consistencies between these factors are readily discerned, and study can be limited to a relatively few significant variables. Thus, the particular limitations, such as professional training requirements, placed upon entry in the retail drug industry certainly help explain that industry's remarkable solidarity; which in turn, helps explain the druggist's power position vis-à-vis manufacturers. 15 But since differences in power and trade solidarity between drug stores are probably not significant enough to upset ceteris paribus assumptions, recent studies pursuing the price and margin influence of such factors as size, product-mix, and costs seem warranted and fruitful.16

Moreover, at least some statisticians believe that retail pricing problems involving many variables can be studied in relatively small samples through modern analytical techniques. 17

- 2. Retailers are ubiquitous. No unincarcerated economist is likely to be far from some retail establishments. The pattern of retailing and retail pricing may differ between small towns and metropolitan areas, but both have patterns that can be studied.
  - 3. Retail pricing is public. Secret concessions and personal deals

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W. F. M. Bass, "Expense and Margin Functions in Drug Stores," Journal of Marketing, June, 1956; O. E. Burley, A. B. Fisher, Jr., R. G. Cox, Drug Store Operating Costs and Profits (McGraw-Hill, 1956).

Cf. B. A. Dominick, Jr., An Illustration of the Use of the Latin Square in Measuring the Effectiveness of Retail Merchandising Practices, and Max Brunk and W. T. Federer, How Marketing Problems of the Apple Industry Were Attacked (Methods of Research in Marketing Papers Nos. 2 and 4, Cornell University Department of Agricultural Economics, 1952, 1953).

<sup>&</sup>lt;sup>25</sup> J. C. Palamountain, Jr., The Politics of Distribution (Harvard University Press, 1955),

are by no means unknown and are of importance in some trades. Many studies of gasoline pricing, for example, have failed to grapple with the problems presented by "under the canopy" or "behind the pump" discounts to favored consumers. Yet it is clear that the prices charged by retail sellers of oranges are far more public than the prices charged for, say, machine tools. Retail advertising and mail order catalogues can provide useful data for analysis, although the extent to which advertised prices represent unadvertised ones is always suspect.

If the investigator can obtain adequate co-operation from merchants or from commercial reporting agencies, fantastically promising opportunities for analysis appear. Thus, for example, one medium-sized supermarket chain carries on forty different types of research studies, several of which relate to its and its competitors pricing practices.18 Empirical studies of retail price maintenance have often been criticized either on grounds of poor sample design or of failure to hold all other things equal. 19 But Ward Bowman has demonstrated that fairly conclusive determinations can be made as to the effects of resale price maintenance in at least one commodity field by taking the price reports received by a commercial research firm from carefully designed store panels in both "fair trade" and "non-fair trade states." ("Prerequisites and Effects of Resale Price Maintenance," University of Chicago Law Review, Summer, 1955. The conclusion is that price maintenance raises the general level of prices.)

4. Besides the investigator's own observations, he can draw on a constantly increasing supply of secondary material on retail prices and margins. Since governmental data, such as the Census of Business and the reports of the Federal Trade Commission and other investigations into distribution methods and costs, chain store competition, and resale price maintenance are very well known to economists, it will probably be advisable to skip over them here and pass on to other published material. In spite of the weaknesses of journalistic data, the retail trade press can yield invaluable information to the investigator who is willing to read critically, checking item against item. To quote Levy: "My main sources of material, however, have been . . . the various trade journals which week by week, or month by month, throw the most instructive light on all matters concerning vital [retail] trade problems. It is regrettable that this valuable source of information is so little recognized by British economists." (Hermann Levy, Retail Trade Associations; London: Kegan, Paul, 1942, pages ix, x.)

Historical analysis is facilitated by the existence of such materials.

Journal of Business, July, 1955.

<sup>18</sup> W. Applebaum and R. F. Spears, "Marketing Research Studies in a Grocery Chain," Journal of Marketing, July, 1952.

19 M. Frankel, "The Effects of Fair Trade: Fact and Fiction in the Statistical Findings,"

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Yamey, for example, used trade journal editorials to analyze the motives and arguments leading to the wide-scale adoption of resale price maintenance in Great Britain, ("The Origins of Resale Price Maintenance," Economic Journal, September, 1952.) His conclusion was that regulation was preceded by intense retail price cutting, not from "ephemeral intruders temporarily upsetting the retail market," but from substantial firms serving the public interest. Pennance and Yamey used trade journals to trace the sources of price competition in British grocery retailing between 1850 and 1939. ("Competition in the Retail Grocery Trade," Economica, November, 1955.) Trade press materials also lead to the conclusion that discount selling and buying are well-entrenched, long-run phenomena in American retailing and not relative newcomers to the scene. This conclusion, in turn, suggests the strength and permanence of economic motivations on both sides of the retail transaction.

The retail operating ratio studies now conducted on an annual basis in many important lines are also helpful. Such data are available for supermarkets, jewelry, hardware, grocery, drug, clothing, furniture, haberdashery, variety, and department stores. (The Fall and Winter issues of the Journal of Retailing will review a number of such studies.) The results are subject to criticism, very largely because of the heterogeneity of the firms and of the accounting methods aggregated into the averages.20

Yet, properly used, the data can be most enlightening. Thus, for example, the Harvard figures on "Operating Results of Department and Specialty Stores" have often been cited as evidence of the Ushaped cost curve, since very large stores tend to show higher expense rates than medium-sized ones. In 1940, however, Elizabeth Burnham reanalyzed the figures on the basis of a city-size classification and concluded: "In each size of city it is the firms with the largest sales volume which have the most favorable operating expense percentages and the greatest opportunity for reasonable profit."21

<sup>&</sup>lt;sup>20</sup> Cf. H. F. Taggart, The Cost Principle in Minimum Price Regulation (University of Michigan Bureau of Business Research, 1938), digested in "The Established Cost Survey," N.A.C.A. Bulletin, October 1, 1938.

<sup>21</sup> "The Department Store in Its Community," Harvard Business Review, Summer, 1940. Note should be taken, however, of other studies on the question of cost behavior. A. Plant and R. F. Fowler, "The Analysis of Costs of Retail Distribution," Economica, May, 1939, and R. Bellamy, "Size and Success in Retail Distribution," Oxford University Institute of Statistics Bulletin, October, 1946, seem convinced that unit costs tend inversely to firm size. R. S. Pollard and J. D. Hughes, "Retailing Costs: Some Comments on the Census of Distribution," Oxford Economic Papers, February, 1955, find evidence of the U in the 1950 British census, although an analysis of specific trades leads to mixed conclusions. For a critical review, see M. Hall and J. Knapp, "Gross Margins and Efficiency Measurement in Retail Trade," ibid., October, 1955. Joel Dean and R. W. James, The Long Run Behavior of Costs in a Chain of Shoe Stores (University of Chicago Press, 1942), also found a U-shaped distribution of costs within the stores operated by one chain. The homogeneity of the units studied makes this analysis especially interesting.

5. The variety of items handled in the average store constitutes one of the more serious objections to using retailing as a laboratory for traditional forms of price theory. Costs—and to some extent demand tend to be common or joint, and consequently, pricing decisions frequently have to be reached without the help of determinant volume: cost information. The implications of this condition were explored by K. D. Naden and G. A. Jackson, Jr., who hypothesized that single product markets restricted competition less than multiproduct markets. Tests showing wider price variations obtaining at any one time for chickens and chicken products in supposedly competitive retail markets (multiproduct) than in supposedly competitive wholesale establishments (single product) in Los Angeles provided possibly debatable confirmation of their hypothesis. ("Prices as Indicative of Competition Among Retail Food Stores," Journal of Farm Economics, May, 1953.) Classification of retailers upon the basis of number of products handled and upon the degree of reliance upon a single product (such as may be noted to a high degree in some gasoline stations. refreshment stands, etc.) may help deal with the joint product prob-

Another serious objection arises from the fact that practically all retailers—except perhaps Marshall's famous hypothetical resort-city merchants selling to a continuous stream of new tourists who never returned-must consider long-run effects and implications of price decisions. The isolated short-run price decision just like the singleproduct situation is rarely duplicated in retailing-or elsewhere in the world, for that matter, except on organized exchanges. Yet again classification into categories of more- and less-long-run-mindedness may provide a solution. Price discrimination is usually conceived of as a device for short-run profit maximization, although many retailers fear its long-run implications. Consequently, willingness to discriminate between customers (except for widely accepted conventional or customary discounts, such as special children's rates) may be a useful indicator of the degree to which sellers have equated short- and longrun considerations. (Service discrimination, such as free delivery, has become so widely accepted a practice that its use is completely consistent with long-run considerations. Cf. W. A. Lewis, "Competition in Retail Trade," Economica, November, 1945.)

All of the foregoing seems to indicate that retailing can be used satisfactorily as a living and evolving economic model, although we must now note a debate as to what the model represents. P. W. S. Andrews has said: "When there are not artificial restrictions, [retail trade] is much the most competitive line of industry." ("Some Aspects of Competition in Retail Trade," Oxford Economic Papers, June,

1950.) On the other hand, K. W. Rothschild feels that it definitely falls under the heading of imperfect or monopolistic competition. In appraising the world presented by Chamberlin and Mrs. Robinson, he says: "That is, of course, a very important addition to the perfect competition model, and a useful frame of reference when we try to explain price in many of the present-day markets, particularly in retailing. ("Price Theory and Oligopoly," Economic Journal, September, 1947.)

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The extent to which retail behavior actually conforms to the predictions resulting from monopolistic competition theory may provide an interesting test of the theory. The verdict is a curiously mixed one.

A cavalier summary of monopolistic competition theory as applied to retailing, especially by the British economists most interested in the subject, seems to involve the following steps.

- 1. Each retailer, by virtue of his unique location, enjoys a spatial monopoly. Service differentiation, etc., may provide other monopolistic elements.
- 2. The sloping demand curve leads to quasi-monopolistic pricing and to operation at less than optimal scale. Imposition of controls, such as resale price maintenance, tends to weaken competitive elements in pricing. Retail rents reflect the monopolistic factor.
- 3. These monopolistic factors, including the failure of retail prices to follow falling wholesale prices, widen retail margins, at times, to points where additional sellers are attracted; thus reducing operations farther below optimal.
- 4. This multiplicity of sellers forces heavy emphasis on selling and promotional costs.

Although, as will be noted below, spatial monopoly is not clearly discernible in retail pricing, it does tend to appear in retail rents. The figures on occupancy costs developed by both Burnham and Bellamy (op. cit.) showing increase in percentage rates with increases in sales volume, tend to conform with predictions based on Chamberlin's Appendix D, "Urban Rent as a Monopoly Income."

On the other hand, the anticipated increases in selling costs do not seem to have materialized. As Lewis points out, "only a very small proportion of retailers think it worthwhile to advertise, this itself being a tribute to the fact that the retail market is not as imperfect as some writers have suggested." (Op. cit., page 218.) Even in one of the most highly promotional segments of retail trade, "markdowns for 1951 exceeded profit and were almost double promotional expense." (N. W. Comish, "Markdown Principles and Practices in Retailing," unpublished Ph.D. dissertation, Ohio State University, 1953.) Since even the most cursory use of retail services demonstrates that retailers are not

intensifying personal salesmanship, the failure to intensify promotional efforts is clear.

The evidence on scale of operations is mixed. The dispersion of costrates reported in each retail trade, whether figured as a percentage of dollar sales or in dollars per transaction, certainly hints that at least some firms are not operating at the optimal scale, even after making allowances for possible variations in services and amenities provided. But, as noted before, analysts are not agreed on the shape of the cost curves, even though the suspicion generally seems to be that fewer, and larger, outlets would lower retailing costs. (Such analysis usually disregards consumer inputs into the shopping process.) Lundy has subjected attempts to develop external standards of optimum numbers of stores to a devastating reductio ad absurdum, 22 and it does not seem that "excess capacity" will be easily measured, or even easily proved or disproved.

Studies of number of shops relative to total population served do suggest a certain degree of responsiveness on the part of the retail population to changing market conditions.23 The relatively full employment conditions of recent years may be the real explanation, but over the last twenty-five years the retail market has not been sliced up into smaller and smaller segments served by retailers of increasing suboptimality and requiring higher and higher percentage margins, as predicted by the theory.

Attempts to measure the degree of imperfection through observation of price patterns run into two difficulties: (1) we do not always know what those patterns are; (2) when we find them, their significance is usually not clear. But first, certain elements of relative certainty. The old chain store controversy has pretty well revealed that very largescale organizations tend to have lower prices than small independent retailers. These lower prices in turn can generally be attributed to lower margins (probably because of economies of scale, including the advantages of massed reserves and possibly because of restriction of services) and to lower net purchase prices. The latter fact suggests substantiation of Professor Galbraith's view that chains can exercise countervailing power to the benefit of the consumer, although room certainly remains for more studies testing the effects upon purchase prices of variations in chain-manufacturer relative market position. Also most of the independent work done on resale price maintenance and its effects seems

<sup>&</sup>lt;sup>22</sup> R. D. Lundy, "How Many Service Stations are 'Too Many,'" in Cox and Alderson (ed.), *Theory in Marketing* (Irwin, 1950).

<sup>23</sup> P. Ford, "Excessive Competition in the Retail Trades," *Economic Journal*, September, 1935. M. Hall and J. Knapp, "Number of Shops and Productivity in Retail Distribution" it is a Number of Shops and Productivity in Retail Distribution. bution," ibid., March, 1955.

to indicate that such imposed controls do raise prices.24

One point of view can be found in Hawtrey's statement that, if the retail market were perfect, any given item would sell at the same price in all stores in any community, subject only to variations (apparently considered minor) resulting from variations in service. (The Economic Problem, Longmans, Green, 1925, page 20.) Chamberlin has refined this by pointing out that imperfect markets can give uniform prices, given certain conditions as to customer distribution, etc. (Theory of Monopolistic Competition, Harvard University Press, 6th edition, 1950, pages 88-89.) Smith went farther, and argued that since stores and markets vary, price uniformity is evidence of market imperfection in the real world (op. cit., page 23). Smith hypothesized that prices should, in general, be lower as one moved away from city centers, because stores located near the termini of commuting railroads could exact monopoly prices. W. A. Lewis, on the other hand, expected the monopoly power to be with the smaller stores in the suburbs (op. cit., page 210). Both, of course, worked with British situations and probably should be tested with British information. At least one such study is available for an English city, indicating actually very little significance for spatial monopoly in the retailing of fruits and vegetables.25 In this country, the BLS has found that variations in retail price movement are rarely affected by urban locational factors—at least in the case of so-called "shopping goods."26

It is conceivable that competitive forces affecting shopping goods in the purchase of which consumers are willing to invest considerable time and effort will not affect other items bought in more routine fashion. A recent French study using several interesting analytical techniques arrived at just such a conclusion: that the markets for "occasional (i.e., shopping) goods" were far less imperfect than those for "current" (i.e., convenience) goods.27 But the British study cited above dealt with fruits and vegetables, i.e., current goods, and J. Hood and B. S. Yamey point out that (in England, at least) the most urgent effort for resale price maintenance has come from convenience goods retailers, who presumably would be the ones already protected by

<sup>&</sup>lt;sup>24</sup> Cf. C. F. Steward, "Mandatory Resale Price Maintenance of Distilled Spirits in California," *Journal of Marketing*, April, 1950, for a ciscussion of the combined effects of resale price maintenance and limitation of entry. Other empirical studies are listed in S. Hollander, *Discount Selling*, Retail Price-Cutting and Resale Price Controls (American

Marketing Association Bibliography Series, 1956).

Tournal of Industrial Economics, August, 1954.

Average Retail Prices: Collection and Calculation Techniques and Problems (Bulletin

<sup>1182,</sup> Bureau of Labor Statistics, 1955), p. 16.

"J. Aubert-Krier, "Monopolistic and Imperfect Competition in Retail Trade," in E. H. Chamberlin (ed.), Monopoly and Competition and Their Regulation (London: Macmillan, 1954).

spatial monopolies. ("Imperfect Competition in Retail Trade," Economica, May, 1951.)

Only one thing seems clear: that studies of price dispersion, useful as they may be in and of themselves, will not provide a very satisfactory measure of market imperfection. Significant studies will, I think, concentrate on the patterns of dispersion and will attempt, in perhaps a rough and ready way, to place price tags on the service variations. The difficulties are manifold, but at least in limited areas it might be possible for the investigator to construct approximations of the various service-demand curves, so as to approach measurement of all stores on a relatively equal service basis.

Such studies will also pay increased attention to the influence of the price-setting methodology. Exactly what are the differences resulting from full cost versus marginal pricing techniques? Due has observed, for example, that stores refrain from marginal pricing techniques because this would constantly lead each retailer into new commodity fields, where he would undersell the established people. At the same time, marginal considerations would introduce price cutters into his field. The resultant instability would be insupportable. Yet in recent years the supermarkets have invaded the pharmacy field, but without serious price competition. While prices may break at any moment, interesting questions arise as to why the theoretical prediction has not vet materialized. Marginal considerations also would seem to recommend some sort of "follow-on" pricing technique whereby additional units sold at one time would take successively lower prices the familiar 10 cent each, 3-for-25 cents approach.<sup>28</sup> Leading students of European retailing are recommending the extension of such techniques.<sup>29</sup> But we really know very little about how such prices affect consumer expenditures, or retail costs, returns, and profits. Full cost pricing and, particularly, application of fairly rigid departmental markups without regard to the variations of service, turnover, and space on particular items have been regarded by many economists as techniques that have rendered department stores vulnerable to more aggressive competition.<sup>30</sup> But again we need studies of the extent to which department store markups, within departments and departmental subclassifications, now tend to conform to or depart from rigid markups, and the extent to which profits or sales could be increased by more skilled price making. Profitable explorations could be made

<sup>28</sup> J. A. Bliss, "Retail Prices Patterned after Utility Rates," Journal of Marketing.

January, 1951.

20 J. B. Jefferys, S. Hausberger, and G. Lindblad, Productivity in the Distributive Trade in Europe (Paris: Organization for European Economic Co-operation, 1954).

30 G. Tornquist, "Detaljhandelns Stordriftsformer," cited approvingly by H. Pasdermadjian, The Department Store (London: Newman Books, 1954); also Alt, op. cit.; Jefferys, Hausberger and Lindblad, op. cit.

of the differences resulting from thinking of expenses and profits as (a) percentages of sales and (b) specific dollar amounts. Trade reports credit many discount sellers with taking business in major appliances away from department stores because of a willingness to accept a certain flat dollar margin per unit rather than trying for a constant percentage markup.

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Analogous to the question of pricing methodology is the question of the basis of sale. Whether carpeting is priced at so much per square yard or at the equivalent price per square foot would seem to be a choice between Tweedledum and Tweedledee; yet the carpeting industry is at present, perhaps needlessly, bitterly divided in debate over the two bases for price quotation. Or, to take another example, why should it prove more profitable to offer trading stamps than to give equivalent cash reductions? Questions of this sort, concerned with the preference maps of individual customers, do tend back toward the question of rationality and irrationality. They are, nevertheless, worthy of greatly increased study.

One more area warranting study, out of the many that could be cited, is the question of the responsiveness of retail prices to changing conditions. G. Tintner has pointed out, as many others since him have also noted, that while retail prices move in the same cyclical patterns as wholesale prices, the intensity or amplititude of fluctuation is much less (Prices in the Trade Cycle; Vienna: Julius Springer, 1935). One leading merchant believes that retailers seeking to avoid the distortions of margins (particularly on the rising side) resulting from this relationship indulge in scare buying and in panicky withdrawals from the market, which he sees as an important factor in cyclical instability (M. Silbert, "Retailing and Economic Stability," in Problems in Anti-Recession Policy, Committee for Economic Development, 1954), A Swiss writer, on the other hand, blames retailing for failing to transmit price and demand information back to manufacturers rapidly enough and argues for integration as a device to avoid production distortions. (E. Boyet, L'Organisation Rationelle de la Distribution: Neuchatel: Delachaux and Nestle, 1954.) Once again, we need more information on the behavior of retail prices over time, and particularly, as Professor W. J. Eiteman has suggested, information on the influence of inventories upon prices. (Price Determination: Business Practice v. Economic Theory, University of Michigan, 1949.)

The list of areas for fruitful research could be expanded, ad infinitum. But they can be summarized in the observation that many questions which should interest merchants should also interest economists: The problem is not one of finding questions but rather one of framing the most useful questions and of proceeding through efficient

means to satisfactory answers. While more studies and more data are needed, they are not enough. The greater needs are for more synthesis of available materials and the casting of future studies into more additive forms.

In spite of some notable exceptions, the teachers of retailing have tended to concentrate upon department store price policies; the teachers of agricultural marketing and economics and general marketing people in some of the land-grant institutions have been primarily interested in food retailing; the pharmacy professors, of course, have concentrated whatever interest they may have in retailing upon the drug store; and all have suffered from some lack of contact with each other and with the "pure" theorist. Conferences upon price research seldom produce all of the concrete accomplishments their sponsors expect. Yet certainly an attempt to bring together merchants, pure theorists, and applied people in various fields to develop some agreement on terminology, classifications, methodology and even hypotheses would seem warranted and promising.

#### THE "PRODUCT" AND "PRICE" IN DISTRIBUTION\*

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The "price" and output of any "product" are brought into some kind of relationship with cost through the competitive process, and a discussion of any of them is inevitably linked with the others. Adam Smith was of the opinion that nothing special needed to be said about distribution; he answered the perennial complaint about too many stores in a famous passage which asserted in effect that the number of firms and the prices charged were subject to the normal competitive laws and could not, under competition, exceed the optimum.

Later economists, without being too clear about it, seemed to feel that somehow competition and price making in distribution were subject to certain disturbances. More than a century of grumbles and insights scattered through the literature were summed up by Knut Wicksell, who noted that retail prices "are frequently regarded as exceptions... generally to every rational process of price formation." Wicksell thought they could be explained by joint costs and location monopoly. Unusual profits were absorbed by additional entrants crowding into the trade, so that the normal effort to maximize profits led to excess capacity and higher costs.<sup>2</sup> Years later came the well-known article by Hotelling, and shortly afterward the modern theory of monopolistic or imperfect competition. Chamberlin was to formulate Wicksell's sequence rigorously, as the "tangency solution," one of the most useful pieces of apparatus which the economic theorist has given to workers in applied fields.

It is worth remembering that the modern theory originated in large measure out of the conflict between the normal competitive assumptions and the facts of daily life of which everyone is willy-nilly aware. The unease we feel about the distributive trades is reflected in our speech patterns. We speak of "value added by manufacture"; but we

<sup>\*</sup>I am indebted to Edwin Kuh for helpful comments on an earlier draft, but he is not responsible for any errors.

<sup>&</sup>lt;sup>2</sup> Wealth of Nations (Modern Library Ed.), Book II, Chap. V, p. 342. <sup>2</sup> Knut Wicksell, Lectures on Political Economy (London: Routledge, 1938), Vol. I,

pp. 86-88.

\* Harold Hotelling, "Stability in Competition," Economic Journal, 1929, p. 41.

\* Edwin H. Chamberlin, The Theory of Monopolistic Competition (Harvard University Press, 6th ed., 1948), Chap. 5, Figs. 12, 17.

ask. "Does distribution cost too much?" Clearly this double standard makes no sense unless we suspect that the value added in trade includes something unnecessary or undesirable. Now some of this may be the physiocratic prejudice that doubtless affects us all in some degree. At a much higher level, there is the feeling that much of our distribution activity is really part of the overhead cost of a commercial and urbanized civilization rather than a net increment to welfare. Undoubtedly, there is much truth in this view, but it is easily exaggerated and I fear has been. For it is in the underdeveloped—or, to use the newly fashionable euphemism, developing—economies that sellers come to market with a few second-hand oil cans, expending a manday or more in marketing them; it is in developed but certainly poorer economies than the American that the housewife buys one egg at a time; it is in the prosperous suburbs of the United States that she buys a week's supply or more and provides delivery, inventory (including refrigeration) facilities, and breaking bulk, so that the retail market services of poorer countries become part of the household economy of wealthier ones and pass out of the money national income. For the United States, Hall and Knapp have shown that state per capita income is positively correlated with the number of stores per 10,000 population but is negatively correlated with the number of food stores the largest single group. I think the same tendency exists, although less strongly marked, as among the metropolitan areas of the United States and Canada. The relationship ought to be explored for census tracts, although my attempt with the special retail census of Dallas for 1953 was not successful. The complete results of the census of 1954 should permit much more intensive work to be done here. But even the fragmentary data at hand show that there is no simple connection between per capita income and the importance of distributive services, and they suggest that distribution is more a matter of additional utility than an overhead cost. They do not bear directly on the impression that the competitive process is somehow not working properly in distribution and is not tending to any optimal price-quantity solution. In trying to solve such problems, we need to ask what we mean by price and product in distribution.

Measurement of a single distributive price or product culminates in a highly aggravated form of the index-number problem, because

<sup>&</sup>lt;sup>5</sup>P. W. Stewart and J. Frederic Dewhurst, *Does Distribution Cost Too Much?* (Twentieth Century Fund, 1939).
<sup>6</sup>P. T. Bauer and Basil S. Yamey, "Economic Progress and Occupational Distribution,"

Economic Journal, 1951, p. 745.

Margaret Hall and John Knapp, "Number of Shops and Productivity in Retail Distribution in Great Britain, the United States and Canada," Economic Journal, 1955, pp. 83-85.

of the great variety of goods handled in nearly every kind of establishment, compounded by the change in the assortment through time. A price index is usually, therefore, of doubtful meaning. On the side of cost of the product, true joint costs are rare in distribution, but common costs are everywhere, and their separation is not usually very effective. A recent investigation of gross and net margins in the Dutch grocery trade is particularly interesting.8 It covered a sample of fifty stores and about 100 items within each store and analyzed costs under ten categories, making considerable use of time studies. The sampling problems and the accounting methods invite comment, but we must neglect them. Two results claim our attention. The average purchase per customer per store varied from 1.06 to 2.56 guilders, which on its face would indicate that a very different bundle of services was being sold. Furthermore, average (for all stores) gross margin varied among products from 5 per cent to over 45 per cent and average net margin from minus 54 per cent to plus 34 per cent. How do we explain such variations? There are probably some elements of genuine price discrimination—either the active exploitation of several demand curves or passive adjustment to whatever lines appear to be most in demand at the moment. The first is a symptom of monopoly, the second of active if nonperfect competition, but in the latter case these differentials relate to an ever changing group. Some of this variation is simply haphazard and based on rules of thumb which—as will be seen in a moment—it may yet be irrational to modify. It also seems to be the rule, in this country and Europe, that staples like sugar and flour are often sold at prices which will not return the cost of sales; and other items may be similarly "footballed" from time to time. This tradition in part reflects a chronic relapse into competition, to be explored later; but for the most part it is a sort of low-grade advertising—the selection and flaunting of a biased sample which is supposed to mislead the consumer, and doubtless often does. Yet we have the record of a large food chain which carried through a very profitable changeover to supermarkets by controlling the gross and net margins and paving no attention to individual prices. The theory was clearly stated by one official: "It would be futile to expect us to undersell everybody on everything. . . . Find some way of impress[ing] upon the public that in the long run they will be money ahead if they spend all their food dollars in our super-markets." (U.S. v. A. & P., 173 F. 2d 79, 7th Cir. 1949, Govt. Exhibit 226.) The example is not unique. Price of the indi-

<sup>&</sup>lt;sup>8</sup>S. C. Bakkenist and D. E. Deutick, Onderzoek naar de Distributiekosten in de Detailhandel in Kruidenierawaren in Nederland ("Investigation Into Retail Distribution Costs of Groceries in the Netherlands"), issued by Prajjer & DeHaan (Amsterdam and The Hague, 1950). I am indebted to my colleague and former student, John L. Enos, for more than the translation.

vidual item simply drops out, and the store is regarded as selling a single service.

On the whole, the best concept of wholesale and retail price is value-added or gross margin, the payment for furnishing the product, wholesale or retail service, or both. It offers great advantages in simplicity and in accuracy, for it mirrors all the forces of demand and cost that impinge upon the distributive operation, and it permits us to measure costs, prices, and output over time. But it brings certain problems in its train.

- 1. For one thing, it would be both a pecuniary and a social diseconomy if the individual distributive firm disregarded variations of cost and revenue as among goods or lines of goods and was contented if total receipts more than covered total costs. This would tend to perpetuate the pattern existing at any moment; it would afford no clue or incentive to lower cost and more profitable behavior. The optimum is somewhere between a single undifferentiated service and a large number of products each with an arbitrarily allocated cost. For the firm, the problem really becomes how to acquire, at reasonable cost, information on its several activities which is as good as, or better than, its competitors—even if by an absolute standard it is quite inaccurate. The problem of economies and diseconomies of scale and of horizontal and vertical integration is largely a matter of devising the smallest possible number of meaningful product-groups or distributive activities within the firm and obtaining some data on them.
- 2. The second kind of problem arises in the study of costs, prices, and output over time. Barger<sup>9</sup> applies an estimated average markup to the deflated value, at the producers' level, of output passing through distributive channels to obtain an estimate of output of wholesale and retail service. His is a notable contribution but subject to at least two kinds of qualifications. One is the changing bundle of services rendered under the catchall name of retail and wholesale distribution. Producers at one end of the channel or consumers at the other may absorb or relinquish some of the services of packaging, warehousing, breaking bulk, delivery, advertising, financing, etc. Even aside from these vertical shifts, distributive firms may do more or less. Therefore, there is no reason to suppose that a dollar's worth of producer's output takes a larger, smaller, or constant distributive service over time. Secondly -and perhaps more important-our use of value measures is distorted by the very process under investigation. Suppose there was a considerable increase in productivity generally but not in distribution. The payment for any given factor tends to equality of net advantage in

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<sup>&</sup>lt;sup>o</sup> Harold Barger, Distribution's Place in the National Economy since 1869 (Princeton University Press, 1955), Chap. 2.

all uses. Over time, the value of a unit of labor or of any other factor used in distribution would increase because its value in other uses had increased. The gross margin and the apparent output of the distributive product would also increase (at a rate depending on various elasticities), although there was in fact no real increase in the quantum of services rendered. Perhaps a deflation by an index of real wages and the prices of inputs might help; none has been devised. I suspect that any such attempt would lead in a circle; and that this is an area where the basic logical defects of index number construction serve not merely to qualify the result but prevent it, because the aggregate product has been defined in terms of the aggregate price, and there is no independent measure of each. But further thinking is certainly needed.

- 3. The abandonment of direct price comparisons also makes it more difficult to reach a judgment about the operations of competition and monopoly. Thus, uniform prices throughout a large market or large number of submarkets, such as a standard metropolitan area, are prima facie evidence not of competition but of its absence, for conditions of demand and cost vary from place to place. But particular prices may be almost the least important thing to compare; they may be set by rule of thumb because the raising or lowering of the price of retail service or wholesale service can take place anywhere along the price front and is best accomplished, indeed, by price changes on lines or types of product rather than by individual items.
- 4. The final qualification for value-added data is the extent to which they may be distorted by inclusion of monopoly gains. Unfortunately, we know little enough about competition in distribution. There is plenty of scope for collusive oligopoly in wholesaling. As an example we may take grocery wholesaling.10 In 1948 the largest one-sixth of general-line wholesalers accounted for nearly 60 per cent (58.5) of sales. This overstates the degree of concentration somewhat, by excluding specialty-line wholesalers, and also understates it, since the total number of firms is about 30 per cent below the number of establishments.11 In the largest metropolitan area, New York-Northern

Table 12-A divides general-line into sponsoring and nonsponsoring voluntary groups. Among sponsoring wholesalers, the sales of the largest 72 were 687.7 million dollars, of the next largest 172, 529.2. Among nonsponsoring the sales of the largest 63 were 542.1 million dollars, of the next largest 293 were 837.5 million. Approximately, therefore, the largest 600 establishments, or 16.6 per cent of the total of 3,633, sold 2,956.5 million

<sup>&</sup>lt;sup>10</sup> The following comments are based on the Census of Business, 1948: Bulletin No. 3-1, The Grocery Trade, Tables 5, pp. 11, 12-A.

<sup>11</sup> The Grocery Trade, op cit., Table 11, p. 63, shows 4,265 general-line grocery wholesalers. It shows also the number of establishments owned by firms owning 2, 3-5, 6-9, 10-14, 15-24, and 25 or more establishments. We have divided the number of establishments in each group by the middle number or by the nearest lower whole number. The last group has been divided by 25. An interpolation formula would have yielded a smaller number of firms; our procedure yields 3,013. One can say in round numbers that there were not more than 3,000 such firms in the United States.

Table 12-A divides general-line into sponsoring and possonsoring voluntary groups.

New Jersey, there are 189 such wholesalers, and one-sixth would be around 31, doubtless more than sufficient for active competition in the absence of collusion. But the number drops off rapidly as we go down the list, and past the largest nine Standard Metropolitan Areas, at most 3 or 4 wholesalers would account for 60 per cent of sales; in about fifteen S.M.A.'s the nearest whole number is 1. Other commodity lines are less concentrated; others more so. Wholesalers are generally small grass-roots folk not politically vulnerable, and hence not so afraid of antitrust enforcement; and there are generally few innovations to induce vigorous competitive behavior.

As for retailing, the inherent differentiation because of location, the inelasticity of demand with respect to the price of retail service (which is only a fraction of total price), and the inertia and ignorance of the individual customer are the elements of a monopoly power which is usually substantial, at least in the short run. Of course, the locational "monopoly" is only the obverse of a wide dispersion of establishments close to consumers which is the very essence of the retail service. But with marginal cost inevitably below average, there is an abiding desire for more volume by any and all means except price reduction. Hence the process of "trading-up," as Professor McNair has called it—more advertising and service constantly added. One retailer's extra services may do no more than offset the expenditures of the other, with everybody worse off—profits down to bare normal for retailers so long as there can be entry and too many resources being drawn into distribution.

Such a judgment does not require any distinction of the truly necessary costs of distribution from the frills, or selling costs from production costs. It would be difficult to consider the annual model change in automobiles as a production cost, for example. Except in one sense, to be explored presently, the distinction is illusory. An additional service, whether or not embodied in any physical object, means an increment to cost and to revenue, and if the latter exceeds the former, the service is rendered. The basic question, which lies at the heart of our interrelated problem of price, product, and competition, is whether the market is providing an objective measure of the value of the particular incremental service. Unless the consumer has the alternative

According to the Preliminary Trade Report: 1954 Census of Business, Wholesale Trade, Series PW-3-47 (October, 1956), the number of general-line wholesale grocery establishments (with paid employees) declined from 4,253 in 1948 to 3,320 in 1954. Information

by size was not available when this paper was written.

dollars, or 58.5 per cent of total sales of 5,049.8 sold by sponsoring and nonsponsoring combined. The degree of concentration would have been slightly higher if it had been possible to consolidate the lists of sponsoring and nonsponsoring. (We cannot tell whether it would have been affected by including unavailable data for the 632 retailer-owned and other wholesalers.)

of choosing the increment of service at a higher price or the lesser service at a lower price, we cannot tell whether that increment is worth its cost in a free market. But this appraisal process does not work smoothly or well. In the first place, the desired and the undesired services are commingled in the general lump of retail and wholesale service which the consumer buys and which, it was previously urged, really constitutes the product. Secondly, even if every single increment to service were desired by the consumer, it does not necessarily follow that he would prefer all of them or any particular combination of them, for the marginal utility neither of money nor of the distributive services is constant. And since experimentation with lower prices is difficult and risky to begin with, there must be a considerable bias toward more services than the consumer wants, and the wrong kind.

It is not a cheerful picture of the retailer constantly pushing up his costs in the hope—often mistaken—of raising the demand function even more; and then seeing above-normal profits slowly disappear because of imitation or entry, whereupon the whole process is repeated. The end result, as the textbooks indicate in the chapter on monopolistic competition, is a smaller scale of output, a higher price, and a larger volume of services than would exist if the consumer could pick and choose in a more competitive market. But this does not prove that the waste is great, nor that the element of monopoly gain and monopoly restriction is a large part of value-added in distribution. For the greater the size of the gap between what the consumer wants and what he is getting, the greater the inducement to the bolder spirits to offer the leaner and better product. The barriers to entry are low, though the market is probably small. The most important obstacle to the innovator is that his entry would add so much to the local supply that price would be driven far down. The solution lies in either spreading over so many markets that the effect on price is greatly damped; or in having so great a cost advantage that existing firms will be driven out.

The thesis suggested here is that competition in distribution often works slowly and with a lag. Since pent-up forces act with some violence, it often takes a somewhat cataclysmic form. The high rate of turnover in distribution is well known and also the innovations that from time to time overtake one branch or another. The distinctive mark of these innovations is that they were carried out by the large establishment (not necessarily the large firm). At one time department stores did unto specialty shops as discount houses were to do unto them; the old-fashioned grocery store was largely displaced by the economy store and it by the supermarket; while the impact of the mail-order house has been recorded for all time in the invective of its rivals. In fact, a useful if not a very precise index of the strength of competition

in distribution is the resentment of the unsuccessful competitors; and, thanks to their ready access to publicity and legislation, the documentation is usually good. The characteristic theme is that the consumer is simply misguided when he prefers—to take the examples best known today because of Congressional hearings—lower priced gasoline or lower priced automobiles; what he ought to prefer is rivalry in service alone rather than in service and price considered together. The consumer, in their view, should not be given what he wants because he wants the wrong things; this is a useful index of the kind of competitive pressure now being exerted in gasoline retailing and automobile retailing and a good clue to the monopoly element in retail value-added.

The general conclusion is that there are elements of monopoly in wholesale distribution and retail distribution which tend to raise the distributive margin above what it needs over the competitive optimum, but that low entry requirements generate countermovements whenever the excess builds up to some critical point. This conclusion is not necessarily optimistic or pessimistic. For the crucial questions are those of fact and therefore of degree: how far the distributive margin is raised before it is undermined by competition and how fast the process works. I hope we can look forward to research in particular trades and markets, in size distributions, and in the determinants of distributive margins. The price and product in distribution have perhaps more than their share of peculiarities; but this should be a motive, not a barrier, to exploration.

### MASS DISTRIBUTION: A PHASE OF BILATERAL OLIGOPOLY OR OF COMPETITION?

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That consumers benefit from mass distribution is quite generally accepted by economists, but both the source of those gains and the theoretical framework within which to place them are in dispute. Some contend that the benefits stem from the large, low-price retail organizations' ability to offset monopoly at the manufacturing level which is combined with such competition in reselling that the savings are passed forward to consumers.1 Others emphasize the low operating costs of these mass distributors which competition forces them to reflect in prices to consumers.2 Finally, some point out the more specific influence on suppliers' prices of mass distributors' actual or potential entry into manufacturing combined with the provision by them of lower priced alternatives for consumers.3

Parallel disagreement exists as to the theoretical framework most appropriate for analyzing the facts about mass distributors as buyers and resellers. Galbraith's "countervailing power" concept or dogma, according to one's liking, has been held to be nothing more than bilateral oligopoly (Stigler, pages 12, 13, and Miller, page 21). If it is, it would not follow, ipso facto, that consumers would benefit (Stigler, page 9). If chain stores buy advantageously as oligopsonists, are they not also oligopolistic resellers who would retain those gains for themselves? Others avoid this problem by arguing that chain stores buy primarily from competitive industries and sell in a competitive market; hence, their role falls under that expounded in competitive price theory (Stigler, pages 9, 13, and Miller, page 21).

### The Organizational Revolution in Distribution

There should be no mystery about what gave rise to chain store and mail-order distributors. They started as small ventures to take ad-

<sup>&</sup>lt;sup>1</sup> J. K. Galbraith, American Capitalism: The Concept of Countervailing Power (1952),

p. 131.

<sup>2</sup>G. J. Stigler, "The Economist Plays With Blocs," American Economic Review, May, 1954, p. 12, and "Comment" by M. A. Adelman, ibid., p. 33.

<sup>3</sup> Clair Wilcox, "On the Alleged Ubiquity of Oligopoly," AEA Papers and Proceedings, May, 1950, p. 71; J. P. Miller, "Competition and Countervailing Power: Their Roles in the American Economy," ibid., May, 1954, p. 21; and R. B. Heflebower in Monopoly and Competition and Their Regulation (1954) (E. H. Chamberlin, editor), pp. 126-127.

vantage of an attractive spread between the costs and expected revenues in the type of business they proposed to do. They could not have been a countervailing influence until their growth had substantially reshaped the buying side of the manufacturer-level market for consumer goods. That they did grow to their present stature reflects the success of two innovations:

- 1. Taking advantage of developments in transportation and communication, they co-ordinated wholesaling and retailing within one ownership rather than through market transactions. This organizational change, along with rationalization of the retailing operation, resulted in a new and substantially lower production function for carrying out the total distributive operation.
- 2. From their beginnings, the enterprises that blossomed into the mass distributors offered a new and less costly product, in the sense of less retail service, for which there seems to have been a tremendous latent demand. They pioneered in offering a lesser variety to choose from and in concentrating on volume items sold on low margins,<sup>4</sup> and in selling not only for cash and without delivery but also with less prompt service. Preceding competition had failed to provide for the sale of two or more such products at different prices in the same store, or in varying types of outlets, to as large a degree as the mass distributors found that consumers wanted.

Because the new production function and the less expensive service reduced their operating costs far below those of rivals, the mass distributors were able to thrive with much lower gross margins. The Federal Trade Commission report (pages 670-701) showed that in the 1929-31 period the gross margin of food chains, when weighted by the chain store volume, was 5 to 6 percentage points below the combined wholesaler-retailer margins. (The differences for drugstore items was far more striking.) Even ten years later, in 1941, the gross margin of food chains was about 12 per cent of retail prices lower than the combined margins of a retailer and full service wholesaler of groceries and about 7 per cent below that of a retailer—co-operative wholesaler channel.<sup>5</sup>

<sup>4</sup>This is the rationale of Federal Trade Commission's finding (*Chain Stores, Final Report on the Chain-Store Investigation*, 1934, pp. 67-71) that chains' margins were much lower when weighted by their volume in various products than when independent store weights were used.

<sup>&</sup>lt;sup>5</sup> Office of Temporary Controls, *Economic Data Series*, No. 26, reports the average chain food store gross margin to have been 16.7 per cent of net sales in 1941 and that of the service wholesalers to have been 14.0 per cent. Independent retailer and co-operative and cash and carry wholesalers' margins for 1941 were not published, but the author recalls that the OPA survey showed an average margin (on sales) of between 16 and 17 per cent for the independent retailers and of from 5 to 7 per cent for these types of wholesalers. Because a larger percentage of the chains' volume is made up of large-volume low-margin items, these store-wide differences in gross margins probably over-

This lower store-wide margin is the significant test of the mass distributors' performance. It abstracts from their lower buying prices to the extent that they were obtained. By being a lower charge for an acceptable quality of retailing service, it makes irrelevant the accusation that consumers were deluded by prices on loss leaders as an index of the savings that could be obtained on other articles.

Such lower margins, which caused higher priced channels of distribution to lose volume, set in motion fundamental adjustments in distribution. Self-service and cash and carry retailing of prepackaged goods has become general for foods and quite widespread for some other products. More important has been a fundamental reorganization of distribution in most product areas where the retail firm is too small to perform what remains necessary of the wholesaler's function. Groups of retailers contract with a wholesaler for that service or form their own co-operative buying and wholesaling organization. The accompanying sharp reduction in invoice cost to retailers (preliminary findings in a study now being made by the author indicate that the margins for such wholesale operations are only a half or even a third or less of those of autonomous service wholesalers) is an indication of the savings from integration. Consequently, by an oldfashioned competitive adjustment, but one consisting primarily of a change in the organization of distribution and not by countervailance. an able retailer's prices can come close to and perhaps equal in some cases those of his chain store rivals.

## Structure of the Supplier-mass Distributor Markets

So much for the organizational revolution spearheaded by the mass distributors; the next step is to describe the character of the markets in which they buy and their role therein. Here is where bilateral oligopolies may exist but there is no way of indicating adequately how a market is organized and operates except by intensive study of it. Concentration ratios, if industries are properly delineated, however, provide a list of oligopoly suspects.

Even on that basis (and using in most cases the census industry categories which are far from a satisfactory classification for this purpose), the food manufacturing industries cannot be blanketed into the nonconcentrated. The following all have concentration ratios of approximately 50 or above: sugar, shortening, margarine, salad dressings, soap, corn products, evaporated (excluding condensed) milk, cheese

state differences in what consumers paid for identical commodities. But that there is a substantial difference is shown by the lower retail margins on specific categories of food stores provided for chains than for other than very large independent stores by the wartime OPA and the Korean period OPS. In the case of all but very large independent stores the retailer would, in addition, have had to buy from a wholesaler at an additional margin.

assembling, cookies and crackers, perishable bakery products, chocolate and cocoa products, breakfast cereals, salt, flour mixes, and baby foods. On the basis of information provided to the author by a market research organization, it appears that these products constitute about 10 per cent of the dollar volume of the typical food store and about 33 per cent of dry grocery segment of that volume.

The list of department and "hard goods" store products supplied by concentrated industries includes electrical appliances, tires and batteries,8 hard surface floor covering, sewing machines, miscellaneous household furniture, small arms, photographic equipment, and vacuum cleaners. Undoubtedly still more products would be added if product definitions were confined to those relevant for price making.

Despite the length of these lists, which are longer than those cited by Stigler (page 12), the available information indicates that probably far more than half of the volume of mass distributors consists of products supplied by less concentrated and distinctly competitive industries. Beyond the categories reviewed here, nearly all apparel and furniture suppliers can be bracketed in the competitive category.

The evidence as to the oligopsonistic position of the mass distributors is not very impressive either, since most supplying markets are national in scope. Concentration in food buying from manufacturers and assemblers of unprocessed foods has become substantial but not high. The four largest chains' total sales accounted for 19 per cent of total food store sales in 1955, as reported by the Department of Commerce. The largest ten handled 27 per cent. To get a total retail volume to compare with that of the department store type of mass distributors, department store volume must be combined with that of stores selling other lines handled by mail-order and low-price chain organizations. Of such a total, Sears Roebuck accounts for about 9 per cent and adding Ward's, Penney's, and Allied Stores makes the total for the four organizations to be 17 per cent of national volume.9 For ten companies the percentage is 23. These are low concentration ratios.

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The percentage of food store volume is converted to a percentage of dry grocery volume by dividing by the ratio (.3) of grocery volume to all food store volume, as reported in the 1948 Census of Business, Volume II, Retail Trade: General Statistics, p. 16.02.

Soutlets built around the line of some other manufacture, such as manufacturer-owned tire stores or refinery-brand gasoline service stations, are mass distributors for present pur-

<sup>9</sup> More relevant for these distributors than in the case of those selling food, is the question of how adequately company-wide sales figures can be related to the store categories used by the Department of Commerce. Some checking with officials of mass-distribution type of department stores indicates that the percentages quoted above are too high by several points.

<sup>&</sup>lt;sup>6</sup> Except for salad dressings, perishable bakery products, flour mixes, and baby foods, the concentration ratios are from Appendix II, Table II, "Study of Monopoly Power," *Hearings* of House Subcommittee on Study of Monopoly Power (81st Cong., Serial No. 14, Part 2-B). The exceptions just listed are for narrower categories than those used by the census. The author's judgment that they all have a concentration ratio of at least

Such product-wide and retail-outlet-wide data obscure an important and likely complementary relationship between firms of opposite size rankings on the two sides of the market. There is considerable evidence that mass distributors tend to buy from small manufacturers and large manufacturers to sell primarily to small firms in the distributive trades. Some business executives refer to this as the logical arrangement, for the mass distributor provides an outlet for the firms whose age and size are such that they have not successfully differentiated their products, or are unable to get stable operating rates through a large number of small orders. Even financing and product design may be provided by the buyer. Obversely, the small retailer sells under the aura of the manufacturer's brand, which also may enable him to obtain a higher margin. And the large manufacturer can get the stability of numerous orders from small resellers. But for a large manufacturer to rely on a few large mass distributors would place participants on each side of the market in a precarious position in the event of a bargaining stalemate.

From this hasty review emerges a picture of manufacturer-distributive buyer markets with varied combinations and degrees of concentration or of nonconcentration on one or on both sides of the market. Even assuming that size distribution as crudely measured forecasts behavior, such a varied set of market organizations gives rise to a series of questions of which only a few can be explored here.

## Mass Distributors as Buyers and Suppliers

The role of mass distributors as buyers is not shown solely by their size distribution; each of the following aspects of the supplier-mass distributor relationship potentially could have a strong effect on the cost of the goods they retail: (1) the multiproduct character of mass distribution; (2) the mass distributors as private branders; and (3) the mass distributors as potential entrants into the supplying industry.

1. There is a marked asymmetry between the horizontal scope of products handled by the mass distributor and that offered by the typical supplier, a fact which may affect relative bargaining power of these two parties. Whether it does depends on consumers' buying habits and the strength of their preferences for particular brands. In the case of "shopping goods"—furniture and most clothing, for example—where brand preferences are not strong, the advantage should lie with the mass distributor for he does not have to handle a particular supplier's product. Of a different sort are such products as appliances, tires, batteries, etc., for which there are well-known manufacturers' brands. But such brands are rarely handled by mass distributors for reasons that would take too much space to explore here. The mass distributors do, however, succeed with their own brands at times as will be seen under "2."

This leaves the convenience good category, or products bought frequently and in small dollar amounts. Most consumers either buy a basketful of such articles at a time or habitually return to the same store. Each article bought is part of a joint demand for the service of retailing a variety of articles at one time or over a period of time. If the consumer does not find the article she expects at a type of store—shortening in a grocery store or the brand she strongly prefers, Crisco—the quality of the retailing service is lessened in her view. She may go elsewhere unless the price differential is sufficiently attractive.

This does not mean that a retailer of convenience goods is a mere order-taker. For many commodities consumers have no strong preference for one brand over several others and for some products, such as sugar, no brand preference at all. The manufacturer of such a line is a beggar at the retailer's office and fights for preferred space and selling effort once he is admitted. Even a strongly preferred brand can be put on the bottom shelf and one with a longer margin at eye level. All such alternatives are more promising for the mass distributor for he often can sell successfully under his own or "private label."

2. In most commodity fields mass distributors put their brand on a wide variety of products as more or less a routine matter, but their major economic influence is where differentiation (by the manufacturers) has been marked but can be eroded. Prior to that erosion, these cases are the epitome of textbook differentiation, whether the article be margarine or coffee or electrical appliances. But once the quality of such products has become generally satisfactory to consumers and an established part of the expenditure pattern of a large percentage of families, they are ripe for the "A. & P." or "Sears" treatment. This involves purchasing (or manufacturing) the goods at an efficient operator's factory cost plus a few percentage points profit, placing the distributor's brand on the goods, and reselling the articles on a margin about equal to or perhaps above that actually obtained by independent retailers on manufacturers' brands.

The resulting retail price of the distributor's brand runs from as little as 5 to as high as 10 or even 15 per cent below that for well-known manufacturers' brands. Under the conditions specified, consumers flock to the low-price mass retailers' brands. Herein lies most of Sears' (and to a lesser degree other companies') influence on prices of appliances and tires and auto accessories and of A. & P.'s (and other food chains') effects on coffee, margarine, and (quite recently) on frozen orange juice and instant coffee. This is clearly a dynamic process and one which has had a marked effect on the elasticity of the revenue curves of manufacturers.

While this private branding role has been powerful for a substantial

number of commodities and of lesser influence for a larger number of other articles, it has had only nominal influence on cigarettes, candies, cosmetics, and drugs generally. The factory cost-retail price spread for these articles invites the treatment sketched above. But no such successful private branding move has been made either because no type of mass distributor has a large enough stake in the commodity—this may be the situation in cigarettes—or, more likely, because the consumer cannot be wooed by the price differential that is feasible.

3. Except in the type of case just considered, the mass distributor is a potential entrant into the supplying industry for in doing so it would have two advantages over most new manufacturers. (a) The mass distributor provides a ready-made reseller demand and merely by displaying the products under its own brand can move a large volume. (b) The mass distributor can supply sufficient capital to build a plant of efficient size.

Beyond that, the operating costs of the mass distributor's plant are often affected favorably by the limited product line it is called upon to manufacture compared to that autonomous suppliers ordinarily find it necessary to offer. In part, this is possible because mass distributors usually sell a smaller variety of items in a product line. Often, in addition, the owned plant makes a still narrower range of items and the mass distributor turns to independent sources for small-volume items in the product line.

Actually much of what full entry would accomplish can be attained by steps short of owning and operating manufacturing plants. The mass distributor may buy raw materials and contract for their processing into consumer goods. Or the same may be done on a cost-plus contract with a manufacturer which may cover a period long enough to amortize the supplier's investment in special equipment. These are the various degrees of entry which the mass distributor can execute whenever the supply situation is unsatisfactory.

Monopoly may or may not be the source of that dissatisfaction. Many of the food plants owned by chain food stores are in such competitive industries as jam and jelly manufacture. Department store chains own or develop sponsored suppliers of some furniture and apparel items. Either the supplying industries are inefficient or significant economies can be obtained by vertical co-ordination through ownership. Other cases, such as in bread baking, are composite of local market oligopoly, of an outmoded distribution method, and of union-influence on wholesale distribution costs. Still others represent genuine monopoly of the sort which forced Sears and Wards into their early manufacturing ventures.

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Regardless of the reason, wherever the product is important in volume and the prevailing margin between the costs of efficient manufacturing and retail price is inviting, the chains are in a position to move in. Their failure to do so is prima facie evidence that the supplying industry is competitive and efficient. That is, this conclusion is valid unless the product is unimportant or consumers are so strongly wedded to establish brands that a large volume cannot be sold advantageously under a distributor's brand.

### Mass Distributors as Resellers

Much of what is written about competition in retailing misses the point about the mass distributors as sellers. There is, of course, the locational advantage of particular stores, but it is small because of the increased mobility of consumers as purchasers. Furthermore, it is a characteristic of independent stores as well.

The real issue is whether the revenue curve of the typical outlet of a mass distributor is sloped significantly because of consumers' preferences for that company's outlets. This seems unlikely given the price appeal basis of competition, which places mass distributors at the most competitive end of a continuum of retailers offering different combinations of product quality and price. Adelman in the preceding paper comes to this view, but only after reviving for a moment the view of smallness and waste in distribution often derived from Chamberlin's large-numbers case. Added considerations include the mass distributors' invasion of each other's markets and the rather favorable entry and expansion possibilities for small operators in the multiproduct distributive trades. The latter has been aided by the success of small retailing firms in developing group buying or co-operatively-owned wholesale organizations which, together with other steps taken as retailers, enables them to acquire a production function and offer a type of retailing service which approaches that of the mass distributors. Finally, and overriding the preceding considerations, is the distinctly inelastic marginal cost curve of all types of retailers at volume rates in neighborhood of those planned, a fact which makes each seller sensitive to loss of volume.

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Cost pressure of this sort is more apt to affect prices when one recognizes the impediments to conjectural interdependence among multiproduct retailers. That such conjectural interdependence must be appraised is indicated by the fact that concentration in retailing in particular urban markets is far higher than for the nation as a whole. This is most evident in food retailing. In 1948, for example, A. & P. sold more than 40 per cent of the foodstore volume in 23 cities and more than 20 per cent in 102 other cities. But even then con-

jectural interdependence would be inhibited for the product is a variable composite of the commodity and its brand, of the reputation of the store, and of the service it offers. It is difficult to conceive of conjectural independence as a significant restraint on altering the variable components of such a product. Second, with the stores selling hundreds of commodities and thousands of items, on any one of which the margins may be varied as a business-getting device, the difficulties of conjectures as to what rivals will do and the opportunities for independent actions are compounded.

Such considerations as have been reviewed here provide some but not full support to a conclusion that whether mass distributors buy as oligopsonists or not, they resell in essentially competitive markets. Strength is added to such a conclusion by Adelman's view (in the preceding paper) of the retailers' product as a retailing service for a broad category of goods and the price as the store-wide gross margin. But neither what has been said here nor in the preceding papers constitutes adequate demonstration of the shape of the individual mass distributor's revenue curve. In the later discussion, nevertheless, the assumption is made that that curve in the moderately long run is not far from horizontal.

### Bilateral Oligopoly or Competition?

Since there is no well-articulated theory of bilateral oligopoly, the literature on bilateral monopoly must be drawn on for guidance. The latter indicates that the level of price to the final buyer and the division of profits between the monopolist (supplier) and monopsonist (distributor) will be influenced by the elasticity of the supplier's marginal cost curve, the elasticity of the marginal value product curve of the distributor-buyer as a reseller, and the relative bargaining power of the protagonists. No stand is taken here on the first of these. Whether the distributive buyer has the bargaining advantage or not, his marginal revenue curve—the unique component of his marginal value product curve—is assumed to be so elastic that he tends to compete away his gains to the benefit of consumers. Where the bargaining advantage lies in markets that are properly denoted oligopolies depends on a variety of circumstances that can best be identified by use of the following categories of market types.

- 1. Oligopoly-like Supplying Industries Selling to Generally Less Oligoposony-like Mass Distributors. These are the markets in which bilateral oligopoly influences on the prices which mass distributors pay their suppliers are most likely. But the above analysis suggests that two major subtypes should be identified:
- a) Those for which the mass distributors cannot develop a route around the demands of the suppliers. The obstacle may be the strength

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of consumer preference for manufacturers' brands which would inhibit private branding by the mass distributor, that there is no small-firm fringe of the supplying industry from which to buy, or that the product is not important enough for the mass distributor to become his own supplier.

Under these circumstances the bargaining advantage appears to be with the suppliers. Beyond the considerations just cited, which weaken the mass distributor's bargaining power, it seems probable that in a number of the supplying industries there is distinctly more concentration and similarity of interests among sellers than in the corresponding distributive industry.

To the degree that mass-distributors' buying prices are above the competitive level in such cases, this does not mean a more than proportionately higher retail price. On the assumption that mass-distributors' margins are at the competitive level, they could only "pass through" oligopolistic influences on the cost of goods resold.

b) Those for which the mass distributor can escape the demands of oligopolistic suppliers. Among the methods of doing so are: buying from a small-firm fringe of the supplying industry, buying from oligopolists at discriminatory prices and placing the mass distributor's brand on the goods, or integrating into the supplying industry.

In this type of situation the bargaining power of the mass distributor exceeds that of the supplier because the asymmetry of breadth of commodity coverage strengthens the multiproduct mass distributor's hand. It makes little difference whether one concludes that the opportunities for going around the oligopoly mean that the supplying industry is not in fact oligopolistic, or that the fear of entry or actual entry holds down the oligopolists' prices. The result, particularly where private branding is successful, is probably a competitive price to the mass distributor (or even lower as will be seen in a moment) plus a competitive distributive margin.

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When the mass distributors have superior bargaining power, whether viewed as the outcome of a bilateral oligopoly or of these distributors' individual ability to award or take away a sizable increment of a supplier's volume, the stage is set for discriminatory prices. In the absence of effective legal restraints—discriminatory prices are the major target of the Robinson-Patman Act—or of such a degree of disappearance of the so-called "independent" sector of the distributive trades that manufacturers' supercompetitive profits in sales to them no longer counterbalance the low margins on sales to mass distributors, there could be a more or less enduring price structure favorable to the mass distributors.

2. Oligopoly-like Supplying Industry and Competitive-like Distribu-

tive Trade. Potentially the results of such a market are more like that of "1a" than of "1b"; the supplying industry can obtain prices above the competitive level but the distribution is done on a competitive margin. The resulting differences in retail prices would reflect only the differences in the cost of rendering differing qualities of retail services. But such a conclusion would be extreme, for such oligopsony-like buyers as mass distributors are more apt to and should be more successful in paring oligopolistic suppliers' prices than would a competitive buying trade. And of course the conclusion that mass distributors resell at a competitive margin may be invalid, but at most only to a small degree.

It is true that the retailer-owned co-operative organizations attempt some of the methods outlined under "1b" for escaping the level of prices charged by oligopolistic suppliers. To the extent that they succeeded, they move toward category "1b." It is the author's judgment that they have not yet been as successful in such moves as have the large mass distributors.

3. Competitive-like Suppliers Selling to Oligopsony-like Mass Distributors. The major issue with respect to markets of this sort is whether mass distributors are able to buy discriminatively and if so whether consumers benefit correspondingly. Under the assumption made earlier as to competition among sellers, discriminatory buying prices obtained by mass distributors would be reflected in retail prices. In the longer run, consumers would lose only if the reduction of volume by the smaller-scale retailers were to bring about such concentration among mass distributors that the assumption that they resell in a competitive market would become untenable.

Most manufacturing industries experience, however, periods of general excess capacity and much of the time some firms would like to sell more at the prevailing price. There is enough imperfection in these markets that (uniform) prices are not driven down along the marginal cost curve and opportunity for price discrimination exists. The likelihood of such discrimination is augmented by the size of orders that particular informed buyers can place.

But adjustments in the capacities of the supplying industry—facilitated, of course, by a rising level of demand—should eliminate such opportunities in time. If suppliers' profits are below the level necessary to induce investment, the capacity should fall relative to demand. Or if discriminatory prices are given some sellers, the movement of investment in a competitive industry (but not necessarily in an oligopoly) should be toward selling in the more profitable market segment and vice versa. Consequently the supply sources for buyers who had been getting discriminatory prices should dry up.

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4. Competitive-like Suppliers Selling to Competitive-like Distributive Trades. This category is listed merely to round out the picture. It does not involve the issues to which this paper is addressed.

Only with respect to one of the above categories does the bilateral oligopoly framework assist analysis materially. It was not designed, of course, for categories "2," "3," or "4" because in each of them at least one side of the supplier-distributive trade market is competitive by definition. In category "1a," where the mass distributor is not able to escape the demands of suppliers, the bilateral oligopoly framework focuses attention on the significant variables. These are the effect of relative bargaining power of the mass distributors on his invoice cost and of the elasticity of his marginal revenue on the size of his distributive margin. It might seem that in "1b" where bargaining power is reversed, bilateral oligopoly theory would be useful. But not only because of the embryonic state of that theory, but also because an expanded theory of competition would be distinctly adequate, the latter is to be preferred.

What is required and effective in such cases is to expand the concept of competition beyond that of mere price and output adjustments for a given product in a market with a given organization. Not merely is the product a variable, historically and for tactical purposes, but the organization is, also. Indeed, the adaptability of organization to profit opportunities has been uniquely important with respect to the distributive trades and their relation to, or participation in, the supplying industries.

All of this opens a large area of research. Where estimates of the significance of types of organization or of results have been given above, they are based on far from satisfactory data. For that reason, and because the validity of the assumption as to the elasticity of the mass distributors' revenue curves has not been demonstrated, no estimate was made of the net effect of mass distributors on retail prices. Testing that assumption will require appraisal of the whole spectrum of differing retail products and of the cross-elasticities of demand and of supply among them, particularly when those elasticities are viewed over a period long enough for organizational changes to be effected.

#### DISCUSSION

HENRY D. OSTBERG: At the outset, I wish to concur in Dr. Hollander's urgent plea for further investigations into the subject of retail pricing. There is no doubt in my mind that this is one of the truly neglected areas of economic and marketing research.

In the few minutes allotted to me, I would like to direct my remarks to two implications which I found in Dr. Hollander's very fine paper. These are, first, that the process of price formation in retail establishments should be studied simply because it is more susceptible to investigation than the pricing methods of manufacturers and wholesalers and, second, that the results of the research into retail pricing techniques can be readily projected into an over-all explanation of price formation. I do not think that such conclusions are entirely warranted. I personally feel that pricing by retailers differs not only in degree, but possibly also in character, with that undertaken by wholesalers and manufacturers. In brief, I am not at all sure that retailing serves as a valid laboratory for the development of a general theory of pricing.

Let us briefly examine some of the unique characteristics of pricing by retailers.

First, a retailer does not always possess the same freedom in pricing as a manufacturer. The retailer may be limited in his discretion by a fair-trade agreement, by a nationally advertised price, by a franchise agreement with the manufacturer, or by a suggested resale price which the manufacturer enforces by refusing to sell to those who do not adhere to his suggested price. Thus little can be learned about price formation at the retail level with respect to products whose resale price is actually determined by the manufacturer.

What I have just said does not, of course, apply to a retailer's private brand. A retailer is free to charge whatever he can get for goods bearing his own brand.

Second, a retailer typically deals in more products than a manufacturer. As a result, the accuracy of the individual pricing decision is much less important to the retailer than to the manufacturer. It is, therefore, commonly made with less care, at a lower level in the organization, and frequently by a large number of persons whose activities and decisions are not fully co-ordinated. It is not unusual for each buyer in a department store to set prices on the goods in his department, subject only to general policies and pressures from the top. Thus there may be a hundred managers in a department store, each setting the retail price on goods assigned to his responsibility. In a manufacturing concern, one major executive or, more frequently, a committee of the top executives of the firm set the price on all goods sold by the company. The manner in which retail prices are established in a department store or, for that matter, in any large-scale retail establishment is, therefore, quite different from the way in which prices are usually determined in a manufacturing organization of equivalent size.

Third, there appears to be a much greater interrelation of demand among goods sold by retailers than among goods sold by wholesalers or manufacturers. This is due, at least in part, to the fact that the consumer finds it convenient to buy as much as possible at one shopping stop. Since the consumer, with his limited knowledge of the market, often judges the values offered in an entire store by the prices charged on a few key items, retailers may find it advisable to price some items in the store to attract traffic, expecting to make their profits on other goods in the store. This strategy has been followed by some supermarket chains, which price their foods to obtain traffic and their nonfoods to make a profit. Along the same lines, I know of two department stores which operate their wedding gown department at a loss, with the expectation that the prospective brides brought into the store by the wedding gown department will also patronize the highly profitable silverware and furniture departments.

I do not wish to suggest that manufacturers or wholesalers never engage in leader or loss leader pricing. They undoubtedly do. But the available evidence indicates that they do so to a much lesser extent than retail establishments. As a consequence, retailers appear to price goods with a much greater regard to their merchandise offerings as a whole than either wholesalers or manufacturers.

In the fourth place, a large proportion of the total expenses of a retail establishment tend to be common and sometimes even joint. Dr. Hollander made this point in his paper. But let us analyze this fact a little further. The presence of these overhead costs in retailing makes the accurate determination of the average cost of handling a product or line by a retailer next to impossible. The retailer must, therefore, resort to some short-cut approach to pricing. Although manufacturers and wholesalers are not immune to the problem of common costs, they are normally faced with a much smaller relative amount of such costs.

As a result of the importance of common costs in retailing, the marginal cost of adding a new line is very small, once a retail plant has been established. Retailers pricing their offering according to marginal-cost principles would find it profitable to sell new lines at anything above marginal cost, assigning their overhead costs—at least temporarily—to existing lines. Firms whose primary business depended upon the lines so invaded would, of course, retaliate by taking on the lines of the encroacher. The result would be, as Professor John Due has observed, constant instability, and even economic chaos, in retail markets. All this is to say that marginal pricing—a cornerstone of traditional economic theory—is rarely found in retail markets. While it is true that manufacturers or wholesalers do not always adhere to marginal pricing, the available evidence indicates that they do so to a somewhat greater extent than retailers.

Finally, while I would not presume to suggest that all ultimate consumers are irrational in their purchase decisions and that all business buyers are rational in theirs, I think we can all agree that there is generally a higher degree of rationality among business buyers than among ultimate consumers. As a result, psychological factors appear to play a much more important role in retail pricing than in pricing for industrial or wholesale markets.

Thus, there is a widespread belief that retail prices ending in 5 or 0, psychologically, find more consumer acceptance than those ending in other numbers. Similarly, empirical research has shown us the importance of non-price factors, such as the "atmosphere" or prestige of a store, in attracting consumer patronage. Even the traditional economic axiom of the lower the price the greater the demand finds many exceptions in retailing. Research has repeatedly shown that Mr. and Mrs. Average Consumer seem to derive some notion of quality from the price. Lowering the retail price of a product in the retail market may, therefore, reduce rather than enhance demand. All this is to say, due to the lack of product knowledge by the typical consumer, psychological factors play a more important role in pricing for the retail market than in pricing for a wholesale market.

There are, of course, other factors which distinguish retail pricing from pricing among these other segments of the economy. I do not feel that the us to discuss them now.

My position, in brief, is that while retail pricing techniques should be studied, they should be studied in order to learn more about pricing among retailers. Such knowledge will, no doubt, be helpful to us in understanding pricing by manufacturers and wholesalers, but it will not serve as a substitute for studying pricing among these other segments of the economy. I do not feel that the retail arena is an entirely satisfactory laboratory for developing a general theory of pricing.

I would like to add one final comment. Dr. Hollander has extended an invitation to marketing people, economists, and businessmen to co-operate in studying retail pricing. I would like to broaden that invitation, if I may, to include our colleagues in the field of psychology. When analyzing pricing problems—and especially those at the retail level—the science of psychology has a great deal to offer to us. Let us not fail to take advantage of the contribution which this related discipline can make to our common quest for greater knowledge.

Wallace O. Yoder: Professor Adelman's paper has emphasized some interesting aspects of the general problems involved in attempting to place a value upon the functions of the distributive system in modern society. It has always seemed to me to be a peculiarly anomalous situation that there is, in most quarters, general acceptance of what Professor Adelman calls the double standard. Value is added by manufacture, but distribution costs too much. This implies that the productive process ends at some point and the distributive process begins at that point to nibble away at the values created. As a matter of fact, even if a discontinuity actually exists, except in a particularly arbitrary sense, it is the efficacy of the distributive part of the productive system which has made possible the production economies which augment the value added by manufacture. What I am trying to say here is but to hark back to Adam Smith: "Division of labour is limited by the extent of the market."

Still accepting tentatively the idea that the whole process of transforming raw materials into human satisfactions is discontinuous, the anomaly of the

double standard does not disappear. It seems to me that in raising the questions we do concerning the efficiency of the distributive portion of the system we close our eyes to some fairly obvious facts.

For example, it is at the final retail level of the distribution process that many of the assumptions of "normal" competition are most nearly realized.

- 1. The number of buyers is large, well aware of its wants, and well oriented to the number and kinds of purchase opportunities available.
- 2. The number of retail sellers of specific lines of merchandise in any given market is more than adequate for effective competitive pressure.
- 3. Entrance into and exit from most retail activities, in fact, for most distributive areas, is relatively much easier than for manufacturing, and the conditions of survival are more precariously related to the firm's ability to offer a product, however defined, at a price which, taking the product-price relationship together, will attract a volume of trade sufficient to cover variable cost, i.e., cost of sales in the very short run, and both fixed and variable costs in the long run.
- 4. It is only when we come to examine the product of the retailer that we find some departure from or toward normal competition, depending upon what we regard as normal in this day and age. In a way, each retail outlet in a given line offers its customers a unique combination of satisfactions which it hopes a large enough number of buyers will consider important to compensate it for the costs incurred in offering the combination. It is this semi-unique characteristic of the product (taken in a very broad sense) that gives the retail firm some slight negative slope to its individual demand curve. It is apparent, however, that the curve must flatten out rapidly at a price only slightly above whatever price it is currently obtaining. Furthermore, the individual firm's demand curve is subjected to constant pressure downward by the price competition of some competitors and to the left by the offer of different and changing combinations of satisfactions by others. It would appear, furthermore, that, given the current customer mobility, the presentday retailer has little opportunity to exploit any significant range of his demand curve on the basis of spatial monopoly.

The temporarily successful innovator at the retail level constantly attempts to vary the combination of services and goods involved in his product in order to present to his present customers and those of other firms the most attractive package at the lowest feasible price for the package. If consumers do not buy the package in quantity he is out of business.

Perhaps a great deal of our difficulty in accepting the reality of value-added by distribution arises from our unwillingness to attribute to consumers en masse the measure of intelligence in purchasing to which they are entitled. We assume, usually, that if a consumer is not precisely and instantaneously influenced by price that he is therefore either ignorant, lackadaisical, or has more money than he needs. Actually, to a particular group of buyers the product of a given retailer may be more attractive than that of his nearest competitor even though his prices may be higher on specific items or clear across the board. In other words, the consumer pays his money and he takes his choice.

This, of course, does not mean that, in making their choices, some consumers may temporarily get combinations of goods and services which are either richer than they want or are composed of the wrong items. I doubt that such a situation can long continue when merchandising is as aggressively competitive as it is in this country today. I think the gist of all this with respect to some of the problems raised is that I agree rather wholeheartedly with Professor Adelman's suggestion that gross margin probably offers the best single measure of the value added by distribution. Obviously, this means that the consumer pays for the retailers' limited product differentiations and special packages of services. He also pays for the added chrome and the added horsepower in his new automobile, but hardly anyone assumes that the chrome and horsepower are not part of the value added by manufacture. I think Professor Adelman has indicated with sufficient clarity his awareness of the analytical problems arising from this use of gross margin as the "price of distribution." I am sure that at this stage there are no easy answers; but a journey of a thousand miles begins with but a single step and Professor Adelman has helped us to take at least a couple of strides along the way.

What I have said thus far takes for granted, as is the custom, that production and distribution constitute a rather simple dichotomy of functions. This concept seems to me to be becoming increasingly unrealistic if indeed it ever was a completely true picture. A more realistic approach might go something like this:

- 1. During each stage in its progress from raw material to consumer each good acquires additional characteristics which, it is fondly hoped, will influence consumers to buy a large enough volume at a price sufficient to cover all costs at all stages.
- 2. The "value of the product" at the end of any stage in its complicated passage from an inert material to its final use is determined at the point of transfer of title, the point of sale.
- 3. The "value added" during each stage is roughly measured by the difference between the selling price at the end of that stage and the costs incurred to bring it to the beginning of that stage.
- 4. It is at the final point of transfer, that is, at the retail level, where all goods must compete with each other for consumer income that values are finally determined.
- 5. If at the time a given good is offered to consumers it has not acquired a bundle of satisfying characteristics desirable enough and cheap enough to cause buyers to substitute it for all others in sufficient volume to pay for the aggregated costs, this good will disappear from the market or the volume and costs must readjust to demand. Consumers must be willing to pay for the aggregate of all costs up to the point of final transfer.

As our productive system is presently organized, some of the functions technically called "distributive," are performed during each stage of a good's passage through its complicated life journey.

Properly to measure the value added by distribution would require us to abstract from the costs accumulating in each stage those costs related to specific distribution functions. It is probably our appreciation of the Her-

culean proportions and intricacies of such a task which forces us to the acceptance of the simpler but still vastly complicated attempt to value distribution on the basis of the dichotomy of production and distribution as though they were separate.

F. E. BALDERSTON: In this interesting paper, Professor Heflebower consults the familiar checkpoints of economic analysis and concludes that as a framework for examining mass distribution, bilateral oligopoly will not do. What we need instead is a "generalized concept of competition" with plenty of Marshallian blurred edges.

Available measures show that degrees of concentration on either the manufacturing supplier or the mass distributor side of a national market are not great. But concentration ratios are not enough to settle the issue as to how business entities will act, and the discussion thus turns to specific modes of mass-distributor behavior, both on the buying and on the reselling side.

Bilateral oligopoly theory has not yet been worked out, and it required courage on Professor Heflebower's part to outline a few determinants of a putative theory and then to seize upon relative bargaining strengths as the one determinant which can indicate whether the theory would be helpful, if the theory did exist. Professor Heflebower's negative conclusion stems from (1) the probable infrequency of collision between a group of oligopolistic manufacturers and a group of oligopsonistic distributors in circumstances where the relationship must be a tight one and (2) the character of bargaining responses (verging, he says, on competitive results) wherever there is such collision.

The latter conclusion is based upon the supposition that bargaining advantages generally lie with the mass distributors, and that their revenue functions, with respect to varying margins, will be elastic.

I hope that despite Professor Heflebower's gloom, theorists will not cease work on oligopoly, even-bilateral. Our chief interest here, however, is to consider the implications of Professor Heflebower's positive suggestion; namely, "generalized competition."

The analysis has four critical stages: (1) the manufacturer's resources, objectives, and modes of behavior toward competing manufacturers, intermediary firms, and ultimate consumers; (2) the mass distributor's resources, objectives, and modes of behavior toward competing distributors, manufacturing suppliers, and ultimate consumers; (3) the vertical relationships, or marketing channels, which have a multivariate character; and (4) the behavior of consumers in the mass.

I shall not discuss the last of these, although much of the problem clearly turns on the nature of consumer responses: degrees of loyalty to product brands or to the distributor's service name; degrees of imperfection of the market (both ignorance or immobility, and segmentation of the market on other grounds such as income-class or group tastes and mores).

Some comments are in order, however, concerning stages "2" and "3." The mass distributor probably faces an oligopoly situation in respect to some activities and a more or less purely competitive one in respect to others. For

example, there appears to be considerable conjectural variation and jockeying for position in the race between big operators for the best new store sites in expanding portions of metropolitan markets.

So far as aggressive promotional and pricing actions are concerned, there may be no oligopolistic sensitivity to the prices of particular goods but much more sensitivity to the total amount of price pressure exerted (as measured by the proportion of price-reduced "specials" to total sales), to the total size of the local advertising budget, or to the use of such promotional weapons as trading stamps. Furthermore, the mass distributor's behavior depends not only on the "objective" situation (number of "close" competitors) but also on how internal strains and conflicts are resolved within the organization.

Conflicts often arise between groups of functionally specialized executives; e.g., between physical distribution executives and merchandising men. For display and other promotional reasons, the merchants may favor large retail units and the holding of correspondingly large inventories at the retail level, whereas physical distribution men will point to the economies of holding stocks in intermediate warehouses and of restocking retail units according to notions of efficient physical commodity flow. Similar conflicts may arise over the broadening of assortments, the operation of "captive" manufacturing facilities, and many other issues. Fundamentally, these difficulties arise from differing conceptions of the true tasks of the organization, and they result in power struggles over priorities, criteria of performance, and assignments of responsibility. How these issues are resolved in respect to each subset of activities helps to determine whether the mass distributor will act as a pure competitor or an oligopolist in respect to that subset of activities.

Professor Heflebower's concept of generalized competition is also hard to apply to the analysis of marketing channels. The appeal of bilateral oligopoly, in this connection, is that it stresses conscious interaction between participants. But it implies interaction with respect to a single maximizing criterion and without hope of escape from the interaction. Many descriptive studies have pointed to the loyalties and conflicts, behavioral rigidities and adaptations, that make for the maintenance, piecemeal reform, or breaking apart of a channel arrangement. There is, however, real need for theoretical exploration of marketing channel relationships. The group of business entities involved in a marketing channel forms a quasi-organization. What forces determine the total work-load of the channel, the relative importance of different functional types of activities in the work-load, and the allocation of work-load and functions among the business entities that are members of the channel's quasi-organization? What explanations can be found for the various types of dominance-subservience relationships to be found in marketing channels? Finally, what determines the outcome of competition between alternative channel arrangements?

These examples seem to me to be be a need for models—and for substantial empirical effort—going beyond the normal range of economic analysis. Understanding depends on theorizing and testing theories, but the framework within which to construct theories—that is, the identification of the variables that count—is well worth continued debate.

# THE MONOPOLY PROBLEM AS SEEN BY SOCIAL SCIENTISTS

### THE MONOPOLY PROBLEM AS VIEWED BY A LAWYER

By Edward H. Levi University of Chicago

A suggestion for the application of law to the solution of a social problem always raises at least three questions. These are: (1) How serious is the need for some correction of the social problem? (2) How great will be the loss of freedom as the inevitable result of the application of the coercive power of law? (3) What are the forseeable consequences, intended or unintended, of the legal means of the remedy which are proposed? In a sense all of these questions—and they could be elaborated into many more—are but parts of one inquiry into whether the legal cure is not worse than the social disease. And it is, of course, natural that people will differ in their judgment as to their prediction of results. It is perhaps worth while reminding ourselves of these obvious questions, for they emphasize that the separate disciplines of the social sciences may not be able by themselves, and in isolation, to determine whether law ought or ought not be applied in a particular way. In this connection we should remind ourselves that law is a blunt instrument, and some of the subtleties of theoretical analysis may be beyond the law's practical performance. In addition, so far as the subtlities of theoretical analysis are concerned, we must be aware that when the intended or unintended consequences of law's application are considered, the factors are numerous and complicated. Prediction is not easy, for we are not fortune tellers. Inevitably a decisive role is likely to be played by the basic presumption with which we approach suggestions for the application of law. The basic presumption or the alacrity with which suggestions for more law are accepted will determine which side has the burden of persuasion.

The choice of the basic presumption concerning the proper role of law may be said to be closely related to the history of antitrust, which is the history of the use of law in a particular way. That history is not simple, and it includes many diverse and sometimes contradictory ideas and movements. It is perhaps an oversimplification to suggest that antitrust itself reflects a presumption against the use of law and in favor of freedom from law in the pursuit of trade. To be

sure, the origins of antitrust reflect an opposition to the exercise of power by the government in interference with freedom of trade. The opposed governmental power manifested itself either in monopoly grants or the misuse of grants by semigovernmental or semiprivate groups. But the underlying theory of antitrust is sometimes summarized not so much as an opposition to interference by the government through law with the freedom of trade but rather as directed against the usurpation of governmental power by private groups. Monopoly in its various forms in private hands was thought to be such a usurpation. So the underlying presumption of antitrust might be thought to be not so much against governmental power or interfering laws but rather as against that private power which when it reaches monopoly strength has the effect of law. A persistent theme in antitrust enforcement, however, has been to create a code of fair competition or at least to give relief to, or erect safeguards for, private parties who are considered injured by unfair tactics. And in this sense an underlying presumption of antitrust might be thought to be in favor of the use of law to interfere with trade if the result is increased fairness. So antitrust might be regarded, then, as but another instrument of law for governmental planning for, and interference with, the competitive economy.

Yet acknowledging the complexities of the history of antitrust and the uses to which it has been put, there probably is agreement that the antitrust laws are supposed to be characterized as distinctive because they do not represent government planning for the economy. In this sense they are supposed to be nonregulatory. They are supposed to be based on freedom from law, both the private variety and the public, for a competitive economy, And such interference as the law inevitably brings is justified as the minimum interference or regulation made necessary because of the existence otherwise of monopoly. And possibly, therefore, we can say that the antitrust laws basically reflect a presumption that the burden of persuasion must be placed on the side of those who urge the application of law to a social problem. As I have suggested, it could be urged that this statement of the presumption reflected in antitrust is too far-reaching, and that indeed all we know is that the antitrust laws are against some forms of private power on the somewhat dubious basis that private power is less good than public. But we must recall that the antitrust laws are not against private power in its numerous manifestations. At least until recently they are not even against economic power, nor, as has so often been said, do they justify interference to compel all competition that is possible. For the most part they are directed solely against monopoly and those restraints of trade which in antitrust history have come to

be thought as inextricably interwoven with monopoly. Thus the use of law and the role of government are narrowly confined, and this is supposed to be the distinctive feature of antitrust.

In large measure, this limited conception of the role of law as reflected in the antitrust laws was the reason that the revival of antitrust enforcement in the Robert Jackson and Thurman Arnold period was greeted with skepticism. Monopoly then was popularly regarded as a significant cause for unemployment and depression. The solution of the monopoly problem was regarded as particularly difficult because of the assumption, held by many, that new conditions of economic life required firms to reach monopoly size. A widely held view was that any attempt to deal with this problem through antitrust would be an ineffective effort to turn back the clock. In the wake of the demise of the NRA, many thought some new form of economic planning and control would have to be devised. Symbolically, antitrust enforcement, which gained formulation and momentum under Arnold, represented the alternative to planning and control. Antitrust came to portray the federal government's interest in free enterprise, and this was a freedom from administrative regulation as well as from monopoly enterprise. To be sure, it was suggested that the new consent decrees were to become charters for industry and thus a constructive formulation of administrative rules for industry. But this promise was unfulfilled. Rather through many devices—in retrospect some good and some bad—the antitrust ideal was revived. The antitrust laws, at least in the abstract, became popular. The effect was to be seen, not only in enforcement policy, but in the substantive content of the laws themselves. As a result in every subdivision of the laws, whether dealing with patents, price-fixing agreements, conspiracies, division of territory arrangements, or monopoly size as monopolizing, there was an expansion of legal concepts. The labor area was the one exception.

If the application of law to a social problem raises the question of whether the cure is worse than the disease, then the problem has to be faced in terms of the situation as it exists at a particular time. While there is a great deal of continuity of talk between the Arnold period and the present, there are numerous differences between the total situation as it is found today and the prior period. The connection between the monopoly problem and business cycle, depression and unemployment no longer seems as decisive as it then did to many; indeed the connection seems remote except for the possible accentuating effect of rigid prices. Perhaps, therefore, there is less of a felt need to do anything about the monopoly problem. Moreover, reflective studies do not show any recent significant increase in concentration;

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indeed they do not show any significant increase since 1904. The sense of urgency previously present either has or should have disappeared. Further, if the greatest contribution of the Arnold period was the symbolization of the government's interest in free enterprise as opposed to control through regulation, perhaps in the present setting this is no longer so much required. Moreover, it is no longer so clear what symbolic meaning is to be attributed to antitrust enforcement.

Probably what is regarded as the continuing monopoly problem today is the existence of economic power in firms of large size. Many of these firms are in industries where a relatively few firms have a major portion of the output. Thus oligopoly is thought to require special attention. And because the problem of economic power through size is hard to handle directly, in that economic power is hard to evaluate and the allowable limits are not easy to determine, much attention has been centered on the causes and effects of this power: as, for example, mergers, price discriminations, exclusive arrangements, and unfair dealing with distributors. An initial question, of course, is whether this economic power means monopoly. So far as the law is concerned, firms of monopoly size which operate without economic justification or, more certainly, engage in exclusionary tactics are guilty of monopolizing and can be dealt with under the antitrust laws. Are these the firms which are thought to have undue economic power, or does that concept refer to firms beyond the scope of the present law's reach? If the latter is the case, is this because the law's definition of monopoly or monopolizing is out of step with the economic definition and is wrong? Or is economic power something beyond and above monopoly or monopolizing for economics as well as for law? These seem to be basic issues when the law approaches what is often described as the present monopoly problem.

It must be admitted at once that the law in action reflects uncertainty as to what illegal monopoly or monopolizing is. The law has sometimes appeared to incorporate the idea that illegal monopoly or monopolizing exists, at least when there is no justification, when a single firm through control of its own output can change the market price. The firm is then said to be engaged in a kind of price fixing certainly as effective as illegal price-fixing arrangements between competitors dominant in an industry. This indeed might be thought to be the doctrine of the Alcoa case. But Alcoa, under the computation used, controlled 90 per cent of the output. The opinion states that such a percentage is enough to constitute a monopoly and goes on to say that "it is doubtful whether 60 or 64 per cent would be enough." Yet a producer of that lesser amount and considerably smaller amounts would be able to change the price by curtailing his own production. His

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control would not be absolute, of course, because at some level other products would be substituted and, given time, competitors would increase their production. He shares these deficiencies, however, with firms of greater proportionate magnitude, although the effect of his action would not be as great or as lasting. Nevertheless, such a lesser firm could be regarded, although the law has not done so, as possessing illegal monopoly power.

The decision of the law not to regard such lesser firms as exercising illegal monopoly power probably reflects a judgment that the law should not interfere where the magnitude of the monopoly effect is not great. I note that Dr. Stocking in his article on the Cellophane case states that "detecting monopoly is simpler than measuring it" and that he quotes Fritz Machlup as being "probably correct" in "concluding that 'so many different elements enter into what is called a monopolistic position and so complex are their combined effects that a measurement of "the" degree of monopoly is even conceptually impossible." But I would question whether detecting monopoly for the purpose of bringing the coercive force of law to bear upon the matter can be so easily separated from the problem of its magnitude. The problem is of course illustrated by the Cellophane case, where one can accept the fact that in some sense Cellophane had control over 75 per cent of a "market" and yet conclude that the albeit imperfect substitutability of other products may limit the magnitude of control sufficiently so that the coercive force of law need not be applied. It would be extremely difficult, as has been suggested, to measure the magnitude of the monopoly. But a court possibly might be forgiven for recognizing the availability of near substitutes which it has seen by visiting the "1952 Annual Packaging Show at Atlantic City."

The choice of the law then seems to be not to interfere with all monopoly power. The magnitude of the power is taken into account, although without much precision. I am not sure how Mr. Justice Reed can know, as he writes in the Cellophane opinion, that "one can hardly say that brick competed with steel or wood or cement or stone in the meaning of Sherman Act litigation." It seems, rather, that in a given case they might be thought to compete. I believe the point is, rather, that the Sherman Act, on the monopoly side, is reserved for the more obvious cases of monopolies with magnitude. In this sense the percentage of market control and the availability of imperfect substitutes are both relevant. The question of monopoly profits has been considered less relevant; the law's emphasis has been on price or production control and not on the presence of rewards. It should be said that the law, through concepts of attempts to monopolize and

conspiracies to monopolize and by emphasizing intent or particular abusive acts, has reached firms with monopoly power considerably less than that of the Alcoa type. It must be said, also, that it has not always known what to do with them after it has reached them. But it has never tried to reach all firms which can change the market price by curtailing their own production.

It is difficult to say that the choice should have been otherwise. For one thing, we recognize and accept throughout the market many forms of minor monopoly power. The existence of minor monopoly power in the form of advantages of location or product differentiation has sometimes been used to argue the inevitability of monopoly power, both small and large. I do not see how this confusion is helpful, but it suggests that we really are not much concerned with the minor and more transient forms of monopoly of small magnitude. A more important point is that once the law moves toward the less obvious cases of monopoly power, various difficulties arise. Not the least of these is that the law gets converted more and more into a kind of supervision of industry. This is particularly true if the industry's cost structure and the reasons for it and the firm's profits and the explanation for them are permitted or required to be an issue in the case. Presumably the arguments of justification will become more difficult to evaluate, and the standard of application probably will be less clear than it is now. Although it would not help on the problem of market definition, a partial escape would be to suggest an arbitrary and, in this context, lower percentage rule and hold fast to it. But even if this were feasible, the argument for this is less compelling when it has not been shown that concentration has significantly increased.

But the argument often is made that special consideration should be given to the problem of oligopoly. Hence a distinction is made between the single firm of lesser monopoly size and power which exists in an area where there are many competitive firms of small size and the single firm which exists along side of a few other firms of somewhat similar size. In the latter case, it is suggested that an inherent propensity towards joint action permits or compels the aggregation of the several units so that a level of undoubted monopoly strength is visible. The law's approach to this special problem could be accomplished either through a doctrine of conspiracy which would permit the aggregation, or, without conspiracy, by treating the existence of the other firms as one of the circumstances of the market adding to the monopoly strength of each of the firms. Both the Paramount and the second American Tobacco case come near to adopting or did adopt the first approach. The approach through the doctrine of conspiracy is made somewhat easier for the law, because conspiracy in antitrust cases need not be based on agreement, or at least the implied

agreement can be found in a common concert—of action, sometimes popularly described by the somewhat discredited phrase, "conscious parallelism." But the legal relief which would follow as the result of a successful case based on this theory need not curtail the power of the individual firm. The agreement or conspiracy can be treated as an illegal act appended to a position of otherwise legitimate power. On the other hand, a successful case brought on the theory that in the circumstances of the industry the individual firm was guilty of monopolizing presumably would have to deal directly with the question of allowable power.

Difficulties are involved under either theory. Under the doctrine of conspiracy, the best evidence would appear to be specific agreements, whereas under the rationale for giving special consideration to the problem of oligopoly, the specific agreements should be irrelevant. A large jump is likely to be involved in reasoning which moves from a finding of specific agreements on some matters to the conclusion that there is a general partnership in monopolizing among the firms. Indeed, the need to have specific agreements may suggest general rivalry and not inherent common action. If there is anything to this suggestion, the case for special treatment of the oligopoly situation, with or without conspiracy, is weakened. If the approach is made on a straight monopoly theory, the presence of oligopolies fashioned as a result of decrees in monopoly cases would be an abiding embarrassment. It is not unlikely this embarrassment would multiply as new distinctions would have to be made to justify more or less competition or larger or smaller size for various industries. Of course it can be said that such distinctions are inevitable when an antimonopoly law is applied. But the problems arising out of them seem less acute when the law is applied only to the firms of quite high percentage of market control. With such firms the monopoly effects are presumably great, and the argument in favor of dispensation for them, because of the efficiencies of scale, has a greater burden to overcome. As one moves downward in the scale of market control, however, not only will there be more cases, but the balance between curbing lesser monopoly effects and yet giving due regard to the efficiency argument will be harder to strike. Since the rewards of lesser monopoly power are less certain, size is more likely to have been caused by the requirements of efficiency. And if the monopoly power in the oligopoly situation is thought to rest on an inherent propensity towards joint action, unless a somewhat doubtful economic assertion is to be converted into an irrefutable assumption of law, the issue of how much joint action there has been and how much rivalry will be present in all of these cases.

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It is obvious that many of these theoretical and practical difficulties arise out of a desire to curtail economic power, even though the eco-

nomic power does not flow from a full monopoly position. It is the monopoly of the single firm occupying an industry, even though there is a problem of defining the market, which is more readily detected. And there is less reason then for measuring the consequences of the firm's position, for they can be predicted theoretically. And while the firm may be allowed to justify its position because monopoly was thrust upon it, not even the rule of reason requires an inquiry into effect. When monopoly restraints, however, are thought to encompass position and behavior further removed from the status and consequences of the single firm occupying a market, the law loses its guide for action. It finds itself, as Judge Taft stated in a related situation, in a sea of doubt, caught between the prototype of monopoly and that of competition. But in the main the choice of the law has been, as I have suggested, to reserve its scope of prohibition for the cases of more assured monopoly strength. It has chosen in the main to be an antimonopoly law and not a law in favor of all competition possible. Such a choice may leave untouched a large area of economic power. although perhaps it is somewhat difficult to know what is meant by this term:

In this situation a strong attempt has been made to change the law so as to prevent the creation of monopoly in its incipiency, and so in this way to avoid for the future cases of lesser monopoly power. The attempt has been made, also, to curb conduct thought to be based upon and perhaps to further lesser monopoly power. I refer to the prohibition of mergers and other conduct such as price discrimination or exclusive arrangements which in the language of the Clayton Act may have the effect of substantially lessening competition or tending to create a monopoly. The Clayton Act's prohibition of mergers has been strengthened, largely through the inclusion of asset acquisitions. The Robinson-Patman Act has jeopardized price differences. Section Three of the Clayton Act has been interpreted to prevent, with some qualifications, exclusive dealing arrangements which cover a substantial number of outlets and a substantial amount of products. The new Automobile Dealer Franchise Act creates a new right of action to compel automobile manufacturers to act "in good faith" in connection with dealer franchises. And there is a strong movement to have a law enacted which will require notification to the government, the furnishing of information, and a waiting period before a merger may be consummated.

The attempt to have more stringent prohibition of mergers—and the pre-merger notification bill must be regarded as an attempt both to supervise and to prevent—is presumably based on two arguments. The first is that any merger reduces the number of competitors. This argument has force, of course, only if it is assumed that the reduction

makes for a difference worth talking about. The second argument is that growth through merger is likely not to be the most efficient growth responding to the economies of scale. But of course there may be genuine economies of scale in growth, even though the growth is through merger. And assuming the existence of what is called "a relatively few firms," the resulting capacity of the industry may be more appropriate if growth is through merger. Since it is not possible or desirable to prohibit all mergers, some standard will have to be used by the law in prohibiting particular mergers. That standard undoubtedly must relate to market control, although it might encompass questions of efficiency and capacity in the industry. The central question surely is not whether the growth takes place through merger but rather the result of the merger in terms of power and possible justification. Separate antimerger legislation must proceed upon the basis, however, that power which is allowable when obtained through internal growth may be denied to growth through merger, because the means used create a presumption concerning motive or effect.

Actually the standard used for the prohibition of mergers in the Clayton Act is most unclear. Perhaps the most that can be said about it is that the standard is intended to go beyond the Sherman Act but not too far. The allowable limits of economic or monopoly power are to be decreased when mergers are involved. But the Clayton Act applies not only to horizontal mergers but to vertical and conglomerate as well. The inclusion of vertical integration is understandable since there is a widely held belief that vertical integration gives a leverage for the creation of greater monopoly power. It may be suggested that this theory is usually wrong except in the unique case where vertical integration in foreclosing an outlet to a competitor happens to place a greater cost on the competitor than on the acquiring company by this maneuver. The inclusion of conglomerate mergers suggests that the antimerger legislation need not be about monopoly power at all, but about size or some economic power which is hard to define or to understand and therefore will be equally hard to enforce. But probably what is intended is a general move downward in the scale towards lesser monopoly power, although why such power should be more dangerous in the hands of a firm operating in several industries rather than in only one is not easy to explain.

The justification for special antimerger legislation is not obvious. The justification does not ring true if it is based on any special inadequacy in the relief given by courts when monopolies have been achieved through merger. On the contrary, the difficulties of obtaining adequate relief are greater when monopoly is achieved through internal growth. Nor can it be said that special legislation was required so that the law would give special scrutiny in monopoly cases to those instances where

the growth was through acquisitions, for this always has been the emphasis on Section Two of the Sherman Act. Perhaps it will be said that mergers should be prevented, since they lead towards concentration, although the results of the mergers do not always show up as a monopolized market because there are countervailing tendencies. But if this is so, then there is less need for governmental intervention. The difficulty for the law, in any event, is that antimerger legislation, while emphasizing a means of growth, attempts to infuse into the law a double standard of market control. This division of standards is not reinforced by new learning reflected in new concepts of market control. It is a different and more divergent double standard than has existed in some degree in the Sherman Act up to now. It will be difficult to maintain such a double standard. It has been said that the idea is not so much to have a double substantive standard but rather to have the courts and the Federal Trade Commission prevent individual mergers on the basis of more doubtful proof. This suggests a dubious limitation of freedom, in that generally we would not want to have courts accept doubtful proof, and particularly when it has not been shown that mergers have resulted in a significant increase in the level of concentration almost since the turn of the century.

I do not wish to overemphasize the newness of the tendencies to push the antitrust laws into operation against the lesser forms of monopoly or economic power. These tendencies have existed for a long time. But it is becoming much more difficult to understand what is meant by the nonregulatory character of the antitrust laws. The antitrust laws are nonregulatory only when they are not in frequent interference with business decisions—when the laws are reserved for cases of larger monopoly power and for traditional restraints such as price fixing thought to have the same effect as larger monopoly power. The curtailment of exclusive arrangements and the regulation of pricing policies under the Clayton and Robinson-Patman Acts, the regulation of mergers-horizontal, vertical, and conglomerate-and the suggested pre-merger notification bill, the special act requiring good faith behavior of automobile manufacturers in connection with franchises all of these reflect a movement to convert the antimonopoly laws into fair-practice regulatory statutes. Regulation exists even when there is not prohibition. It includes the continual or frequent government inspection of business practices in formal hearings, with the necessity for justification, for the submission of data, and the requirement of delay. Perhaps, then, there is reason to pause before a law which has symbolized free enterprise is converted into but another congeries of regulatory statutes for the control of business.

## ANTHROPOMORPHIC CORPORATIONS, ELITES, AND MONOPOLY POWER

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## By Earl Latham Amherst College

This is a paper on political theories of monopoly power, with special reference to Galbraith, Mills, and Berle.

The political scientist who reads material on monopolies written by economists is struck by three things. First, people who write about monopoly are usually talking about something else, not about monopoly in the strict sense of the word. The talk is rarely about an industry situation dominated by a single seller, but often about the sizes of enterprises, collusion among businessmen, oligopolistic co-operation, unfair competitive practices (like price discriminations), and so on. For this paper, the formulation made by Walter Adams and Horace Gray is useful: ". . . an industry situation where a single firm or a small group of firms—by virtue of horizontal, vertical, or conglomerate integration—possess substantial economic power." The key phrase is "substantial economic power," for it is in the governance of this power that political science is interested.

Second, the political scientist is impressed by the scholarship that has produced many valuable prescriptions for the regulation of specific aspects of the antitrust problem. In the interests of making the economy more competitive, there is no lack of wit and wise counsels to make it so; only a lack of will. Third, there seems to be an increasing tendency to discuss monopoly as a problem of power although some who do so show less respect for precision than when talking, say, about the marginal utility of differential increments. The political scientist concerns himself with the phenomena of power, and although many of its manifestations cannot be quantified, some can, and to read discourse that treats "power" without definition or discrimination can be as fruitless as economic discussions which are confined to general statements about "wealth." But precise or not, theories of power in human relations are "political theories"; and theories of monopoly power are political theories in a sociological context.

1. The Politics of Economics. The study of politics within the last twenty years has tended to push away from an earlier preoccupation with the forms and institutions of the public government; and political scientists have learned again what Madison and Calhoun never forgot; namely, that government and society intersect each other and that

both contribute links in the same mesh of social controls. Business is a system of power, says one. The American Medical Association has a political life, says another. The A. T. and T. is a structure of private government. Such statements show an awareness that systems of sanctions wielded by official agencies and private organizations resemble each other closely; and that the differences are sometimes merely ascriptive and not organic.

Some economists seem to exhibit the same insight. Corporations are structures of power. There are structures of power and patterns of influence in the factory as surely recognizable as in city hall or the United Nations. What the authors of the American Business Creed call the managerial view of the economic system is a recognition of the essentially political nature of that system, that men used to say was autonomous and automatic, untouched by human hands. To one outside the guild, it has seemed that economists have moved from talk about perfect competition to talk about imperfect competition, oligopolistic competition, workable competition, or, as Adams and Gray say, "workable monopoly"; and that this change reflects growing understanding of the basic political nature of the economy. The very notion of competition assumes the existence of regularized rules (imposed by natural forces) upon the struggle of large numbers of men for scarce resources. This is a problem of power which for a long time seems to have been obscured by the fiction that men did not make the rules.

2. Unavailing Countervailance. Still a further sign of the growing awareness of the political nature of economic activity is the appearance of theory about monopoly power, a phrase preferred to "monopoly competition" because discourse about monopoly competition seems to apply to monopoly, analysis that was originally developed for situations assumed to be non-monopolistic. The phrase "monopoly power" seems more accurately to state the new interest, because prime concern is not with aberrations in the performance of an ideal price mechanism (although this is involved) but with control of the behavior of monopolists as the commanders of important social power. Three such theories of monopoly power are of special interest: one by an economist, one by a sociologist, and one by a lawyer-economist. Alle three may be viewed as explanations and interpretations of the presiding political characteristic of the economy in the twentieth century-concentration of economic power-and may be judged, therefore, as works of amateur political theory.

The first of the three writers is John Galbraith. In a 1953 review of his book on *American Capitalism*, Walter Adams pointed out that the thesis of countervailing power was undermined by vertical integration and top-level financial control; and he thought that bilateral

monopolies created through countervailance were not a happy solution of the economic power problem, that interindustry competition was not a meaningful substitute for competition in the neoclassical sense, that countervailance through governmental regulation was often subverted by the creation of a community of interest between the agency and the clientele it was supposed to regulate, and that the whole thing anyway rested upon the dubious assumption that giant-sized firms are the inevitable result of modern technology and economics.

The political scientist can accept such criticisms where they seem to be justified and add certain others. He would reject the claim of the author that the phenomenon of countervailing power "has gone unrecognized in economic or political theory." In fact it is one of a numerous family of political theories with a sociological base, dating at least from the time of Polybius. The elements of countervailance that Polybius analyzed in the Roman Republic were "accurately adjusted and in exact equilibrium," so as automatically to oppose power with power. There are many other such theories in the literature of politics. James Madison, for example, had a theory of interests, or the elements of such a theory, more sophisticated in its understanding (although not worked out in the same detail) than that of Marx who, with Hegel, called "dialectic" what Galbraith calls "countervailance." John C. Calhoun also had a theory of interests in which substantial social and economic elements were expected to block and countervail the power of adversary groups.

It is perhaps the name of Arthur Bentley, among the Americans, which should be given most credit and prominence for inventing Galbraith's conception of countervailing power. Borrowing his basic concepts from sociology, he saw society as a seethe of groups intersecting and crisscrossing each other; in continuous social competition for advantage; making and unmaking organizations to counteract and countervail the power of adversary and hostile groups; shifting weights and influence from one plane of social tension to another; moving and thrusting for position, preferment and power; working in, through, above, behind, beyond, and under the formal institutions of the public government; now joining, now resisting these formal institutions of the public government, themselves parties in interest and combatants in the fray. Bentley did not make the mistake that Galbraith seems to make throughout, in supposing an artificial separation between government and the social and economic groups it regulates.

When government intervenes, it is often merely another form of pressure which social and economic groups can bring to bear upon each other. The government in an open society like that of the United States tends to take on the form and color of the principal groups that

put it in power and tend to support it; and policy tends to be formed in the interests of and for the benefit of such supporting groups. The curtailment of monopoly power will not occur by virtue of the semiautomatic operation of Galbraith's simplified pluralism. It will occur at that point when a large enough combination of groups of farmers, unions, small businessmen, organized consumers in various walks, lawyers, intellectuals, and so on elect enough congressmen and perhaps a president who will put into law any one of the excellent programs for the control of monopoly (like that of Stocking and Watkins, for example) that are now available. This happened twice before, during the periods of Populist and Wilsonian progressivism, and it may never happen again. If it does not, it will be because indispensable elements in such a coalition lack the necessary will to organize.

3. The Power Elite. Opposed to the unavailing political theory of countervailance is the doctrine of The Power Elite, recently published by the second of the three writers considered in this paper, C. Wright Mills. Mills rejects Galbraith's position as the "romantic pluralism of the Jeffersonian ideal," denies that the people really govern themselves either directly or through responsive representatives, and asserts that decisive power in America is in the keeping of an interlocking structure of three orders, whose ruling circles constitute the power elitethe orders being the economic, political, and military. False, says he, is the "image of a balancing society in which no unit of power is powerful enough to do more than edge forward a bit at a time, in compromised countervailance with other such forces, and in which, accordingly, there is no unity, much less co-ordination, among the higher circles." So we learn that effective power in America is in the hands of the corporate rich, the warlords, and the political directorate. These orders have an interlocking membership and transfer from one to the other at the top is relatively easy. General MacArthur sells typewriters and Charlie Wilson manufactures defense and security. The power that this elite wields derives from the institutions the membership occupies.

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The merit of this approach, as Robert Lynd has pointed out, is that contemporary power is viewed not piecemeal but as a whole, a point of view which is often weakened by "analyses that deal only in immediate terms of personality, or of whether monopoly is or is not efficient, or of bureaucracy, or of other isolated aspects." A further merit of this approach is that it does not talk just of economic power—as economists do—or of governmental authority—as political scientists tend to do—but of what Lynd has also described as the "most characteristic feature of power in society" in that "separate powers . . . tend

to flow together in working arrangements and so to become a structure of power coterminous with the society."

But the theory is inadequate in many respects: it is incomplete, partial, and unsystematic; the orders somehow appeared as a consequence of capitalism but no explanation says why; the orders are too rigidly stratified and unwarrantedly autonomous and separate; unlike other elitist theories, that of Mills does nothing with the concept of class and therefore has no explanation for the asserted coherence of supposed interest among the upper circles of the three orders. Presumably corporate power is the decisive member of this triad of twentieth-century estates, although the analysis also seems to assign equal weights to the other two elements at times. Perhaps the greatest weakness, however, is that the theory is simplistic, like that of Marx who assumed the existence of two classes of adversary but homogeneous interest in fateful war with each other.

It is the suggestion of this paper that Galbraith and Mills are both wrong for reasons peculiar to their particular shortcomings. The countervailance of monopoly power is not so easy as Galbraith imagines, nor so automatic; and the impregnability of corporate power is not so great as Mills thinks, because the society is not constructed the way he says it is. The pattern of opposing interests is more complex than he will allow; and the ways to organize them against any one of his orders through political action are many and viable.

4. Corporate Anthropomorphism. This leads to the third of the writers on the political theory of the economy, A. A. Berle, whose book, The Twentieth Century Capitalist Revolution, may convince some readers that it is foolish to oppose corporate power. Like Galbraith, Berle claims the discovery of lands explored and mapped by others long ago. The corporation is a political institution (Mills says this also) and deserves to be studied as such: "This is the stuff of pure political theory [otherwise unidentified]. It has been disregarded thus far, chiefly because in recent years, pure theory in political science has received all too little attention." One gets the feeling that this would not have been so if Berle had not been so busy. The tremendous work in the political theory of corporations done by von Gierke, Figgis, Maitland, Pollock, Laski, and others is not mentioned. Hobbes in the seventeenth century had some appropriate strictures on corporations, which he likened to worms in the body politic. Berle goes beyond this. For him, corporations seem to be people—not just folks, exactly, but institutions endowed with some of the attributes of personality.

Berle's anthropomorphic corporations have life and survival, are parthenogenetically reproductive, have intelligence, will, and, above all,

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conscience. The older checks on corporate power (the capital market and competition) have lost their vitality but others may be emerging: the force of public opinion and the fact that although the "concentrates" are powerful, ordinarily they are not single sellers. There is also the power of the state to balance the power of the concentrates. Thus Berle stands midway between Galbraith and Mills and shares the errors of both. He perpetrates the fallacy of the separation of state and society (Galbraith) while he ascribes to the corporation most of the attributes of what political science used to call state sovereignty (Mills).

It is in his Millsean mood that Berle comes close to abolishing the state and turning its functions over to the corporations. The power of the corporation, he says, "though limited, is in large measure, absolute." And further, there is sound historical basis for asserting "that the corporation has some color of state authority." Indeed, the corporation has "de facto at least invaded the political sphere and has become in fact, if not in theory, a quasi-governing agency." And it seems to govern quite as well if not better than the public agencies of the state. The State Department, for example, has left most of the important decisions in important sectors of international affairs to the judgment of private corporations, Corporations, more successfully than nationstates, have achieved stable world government (in oil). In a final surge of Utopian vision, Berle commits posterity to the benevolent governance of soulful corporations: "In the coming 'City of God.' the state is not to be the dominant factor." Although the state has not exactly withered away, most of its functions will have become unnecessary because they will be performed by corporations.

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5. Towards a More Perfect Union. These suggestions of Berle are very interesting and imagination moves to draw the features within the profile he has sketched. Berle speaks of the corporations as though they were states of the Union and even says that he expects the time will come when the Supreme Court will hold under certain circumstances that corporations are under the restrictions of the Fourteenth Amendment. This may not be unreasonable. Some of the historical states of the Union began as commercial corporations. It needs only a small push of speculation to imagine a constitutional convention like that of 1787 to bring the new corporate states into a more perfect union with the rest of the country. Although the prospect is remote for the establishment of a "Corporate States of America," the fancy may contain a grain of truth that is worth salvaging.

When men like David Lilienthal in his book, *Big Business*, can propose the adoption of a "basic economic law" which bids us to embrace even bigger businesses and to cast out worry about preserving compe-

tition and small business, the time has come to consider patterns of control that will be commensurate with the size and nature of the objects to be controlled, as Lilienthal says, in the public interest. No mere commission administering a single statute of regulation will be equal to the task. Perhaps the whole power of people should be summoned to the task before Berle dissipates the state. The Constitution of 1787 provides a pattern of control and power for the integration of the historical states into a single Union. Perhaps Berle's conscience-guided corporations and Lilienthal's supergiants of business might be similarly integrated. The 1787 pattern would at least have the merit of arresting the push towards domination of the state which he previsions and which Mills says has arrived.

At a stroke, the 1787 design deprived the historical states of military and diplomatic powers and of the power to coin money. The condottiere of the twentieth century—Brink's, Pinkerton's, and other protective services—might be disarmed and their functions given to the central authority. It should be possible to recover control of foreign policy from Berle's corporate states; and to recover control of the currency by transferring the functions of commercial banks to the central government. The 1787 Constitution guaranteed to each state a republican form of government. Berle speaks of corporate power as "in a large measure, absolute," and Mills says of corporations that they are "of course totalitarian and dictatorial." The credentials of corporate states could be refused until reorganization had made them less absolute and dictatorial and more republican in form. The 1787 Constitution gave the central government the power to regulate elections in the states, and this might be a useful power to vest in the central government over the corporate states. Since no one in a political election can vote by proxy, the central government might require each of the voters in stockholders' elections to exercise the franchise himself. The purchase of elections would be forbidden, and the cost of elections would be borne by the candidates and the parties they represent and would not become a charge against the corporation, as is now sometimes the case.

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As in 1787, the right of taxation would be a concurrent power, taxation being understood as the power of a corporate state to appropriate, by manipulating prices, certain sums from the buyer for the maintenance of the corporate state. Each citizen of a corporate state, like each citizen of a historical state, would be entitled to the privileges and immunities of citizens of the several corporate states. Among these rights is immunity from discriminatory taxation. Discriminatory prices would therefore be unconstitutional. Since no new state can be created out of another without the latter's consent and no state may acquire the

territory of another, there will be ample constitutional justification for policing mergers, amalgamations, and other attempts at combination. The control of patents will be vested exclusively in the central government after being taken away from the corporate states. It will not then be possible for the larger corporate states to maintain and even increase their size by patent arrangements, all of which will be under the direct supervision of the central government.

If the 1787 design were to extend not only to the control but to the representation of the corporate states, it would be necessary to devise a bicameral system. The lower house would be elected by the people of the corporate states and would represent them on the basis of numbers. All corporate states would have equal representation in the upper house. This presumably would automatically take care of the interests of small corporations, since they would have equal (even superior) power. One corporate Nevada would equal one corporate New York. As the small historical states knew when they strove for equal representation in 1787, such a device as a corporate Senate will prevent the exploitation of the small by the large members of the Union. The opportunity that equal representation would give the small states to set the tax (price) level would also automatically free them from the domination of the big ones in this field. The new upper house would confirm ambassadors to foreign countries, as is now the case, and the principle of senatorial courtesy should give small corporations a chance to take their places in the embassies abroad, alongside General Foods, Crown-Zellerbach, American Telephone and Telegraph, and other large corporations.

If the 1787 experience were to be repeated, the fight over the ratification of the new corporate constitution would be stern, with the antifederalist party among the corporate states arguing, as the historical states did, that there is no need for a strong central authority, that the corporate states could be trusted to observe equity and do justice. Berle's statements about the moderating effects of the new conscience which he has observed among his humanoid corporations might be cited to support this view. But James Madison may be offered in rebuttal: "In framing a government which is to be administered by men over men, the great difficulty lies in this: you must first enable the government to control the governed. . . ."

## THE SOCIAL SIGNIFICANCE OF THE MODERN CORPORATION

By CARL KAYSEN
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My title has a portentous sound, the more so when set alongside those of the other papers on the monopoly problem. But the title does not convey any intention to utter the unutterable, or even to reach beyond economics to examine the corporation from all possible perspectives in social science. Rather, it is an economist's attempt to set forth some observations and tentative conclusions which ought to be of interest to social scientists generally, professional or amateur, economists or not.

In the course of this discussion, I wish to give to the words "modern corporation" a special sense, using them to refer to an idealized picture of a certain type of corporation, taken as broadly representative of the way in which the large corporation is developing. I do not claim that the modern corporation as here described is statistically representative today, or that it is the model toward which all corporate enterprise is evolving. But it does represent certain tendencies characteristic of the numerically small but important group of large corporations which produce a large share of output in manufacturing, mining, power, transportation, communications, and finance and are of growing importance in trade and some parts of service. This picture also mixes—deliberately—elements of fact and norm, depicting the modern corporation as it is becoming and as it is seen by its increasingly articulate and numerous champions.

The characteristic structure of the modern corporation can be sketched as follows. It is large, both in terms of measures of absolute size, such as total assets, and in relative terms compared to the size of the major markets that it serves. In these markets, the firm is either dominant or one of a small group which jointly dominate the market; in either event, it has considerable market power. It is generally complex in structure: operating a multitude of establishments widely spread geographically; selling a variety of products and operating in a large number of industries; often crossing the boundaries of industrial divisions and engaging in primary production, manufacturing, and trade (though this will be less true of firms whose primary activities are subject to detailed regulation). It is founded on mass production

and mass marketing; where its primary activity is manufacturing, it relies on complex technologies which are frequently changing and which cover a wide range of potential applications. The development and promotion of new products and new methods of marketing play an important role in its activities.

The modern corporation is growing, and growth is seen as a permanent feature of its activity. Growth is linked to immortality: through growth and change the enterprise endures beyond the decay of particular markets, particular sources of supply, particular technologies.

Ownership is disappearing. Stockholding is widely dispersed; no single group of persons, in or out of management, has significant control over corporate action resting on stock ownership. Dividends are stabilized in the neighborhood of half average earnings; stockholders in effect become holders of perpetual bonds. With the sublimation of ownership, management has become professionalized. Managers are not owners. Typically, they are internally recruited; the winners in a career of bureaucratic competition within the enterprise which they manage. Directors and officers become less distinct; the board of directors is simply the "committee of the whole" of the executive group.

The whole labor force of the modern corporation is, insofar as possible, turned into a corps of lifetime employees, with great emphasis on stability of employment. To be sure, the economic limitations of such a policy are still sharp, and what is possible for A.T. and T. may not be possible for G.M.

In sum, membership in an enduring institution has replaced relations of ownership and employment all the way up and down the corporate hierarchy.

So much for structure. What are the characteristic features of behavior in the modern corporation? First is the emphasis on "scientific management"—on rationality in the managerial function. Management itself is subject to an intensive division of labor. The tools of academic science are brought to bear on each part of the management task in full array; psychology, sociology, economics, statistics, applied mathematics increasingly invade areas of decision in which "business judgment" alone—or modestly fortified with a little accounting—once held sway. Intuition gives way to computation.

Second is the great weight attached to growth and technical progress as measures of achievement. Growth itself is important; the successful firm should be growing at least as fast as total output. Indeed, such a rate of growth represents only conserving a given position. Through the constant addition of new activities, the firm aims at even more. So long as there are substantial sectors of the economy not dominated by the modern corporation, this aim can be achieved. Growth is pre-

sented in terms of change rather than mere expansion of existing activities. This means substantial investment in research and development to create new products, and further substantial investment in advertising and promotion to create demand for them. Coupled with the emphasis on growth is an emphasis on long-range planning and a corresponding desire for short-run stability. Short-run price policies are fixed; selling efforts vary to maintain demand. In the longer run, falling costs arising from cost reduction permit lower prices or more output at given prices.

The third characteristic of the behavior of the modern corporation is the wide-ranging scope of responsibility assumed by management. No longer the agent of proprietorship seeking to maximize return on investment, management sees itself as responsible to stockholders, employees, customers, the general public, and, perhaps most important, the firm itself as an institution. To the customers, management owes an improving product, good service, and fair dealing. Where customers are themselves firms, not households, the emphasis on fair dealing is especially strong. To the employees, management owes high wages, pensions and insurance systems, medical care programs, stable employment, agreeable working conditions, a human personnel policy. Its responsibilities to the general public are widespread: leadership in local charitable enterprises, concern with factory architecture and landscaping, provision of support for higher education, and even research in pure science, to name a few, To the firm itself, as an institution, the management owes the primary responsibility of insuring the maintenance and, if possible, the expansion of its long-run position; in other words, sustained and rapid growth.

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It may be argued that all this amounts to no more than long-run profit maximization, and thus that management in the modern corporation does no more than business management has always tried to do, allowing for changed circumstances. But the uncertainty attached to some benefits (say those of being a high-wage employer), the difficulty of translating into cash terms others (such as maintaining good community relations), the remoteness in time of still others (such as supporting liberal arts education) indicate that profit maximization must be given a very elastic interpretation indeed to cover all these activities. While all who use words may avail themselves of Humpty-Dumpty's privilege, there appears to be some merit in recognizing a difference between profit maximization as traditionally conceived, which concerns itself with inflows of cash to the firm which can be estimated with some degree of definiteness, and the kind of policies I have been describing.

From one point of view, this behavior can be termed "responsible":

there is no display of greed or graspingness; there is no attempt to push off onto the workers or the community at large part of the social costs of the enterprise. The modern corporation is a soulful corporation.

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From another viewpoint, we can summarize the behavior of the modern corporation in terms of the use it makes of its market power: (1) to insure the security and permanence of the institution, by aggressive creation and occupation of developing markets and technologies, so far as possible; (2) to pass on benefits to the "members" of the institution at all levels of the institutional hierarchy; and (3) to pass on benefits to the general public, chiefly in the shape of new product and lower-cost technologies for making old products more abundant, but also in other ways.

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So far, what I have said is familiar enough, even commonplace, and therefore I have spent no time elaborating it with argument and example. Both the current extent of the phenomena I have described, in contrast to the ways of business behavior as more orthodoxly conceived, and their probable future are arguable. That Standard Oil of New Jersey, American Telephone and Telegraph, Du Pont, General Electric, General Motors—to name only a familiar few—are better described in terms of the soulful corporation than in terms of the profit-maximizing quasi-monopolist seems reasonably clear. So does the extension of these patterns of behavior by imitation, by merger, by the impact of inheritance taxes on closely held companies. Countertrends may also exist; not all sectors of the economy are equally suitable to organization on the scale of the giant corporation, and some of the growing sectors, such as service, seem less so than relatively stable ones such as manufacturing or declining ones such as mining. More flexible technologies and increasing degrees of product diversification may diminish the significance of industry boundaries and increase the number of rival sellers in particular markets enough to increase market competition even though giant firms in aggregate retain their statistically defined position; thus narrowing the discretion available to the representative corporation. But it is not necessary to settle the question of the ultimate position of the modern corporation to be concerned about its meaning and its relation to the problems of monopoly and market power.

In trying to appraise the soulful corporation, we can examine it from two different points of view. The first is from the standpoint of market power. It is worth repeating that the possession of a substantial degree of market power is characteristic of the modern corporation and, indeed, a necessary condition for the display of its characteristic behavior. Only the ability to continue to earn a substantial surplus over costs makes possible a variety of expenditures whose benefits are broad, uncertain, and distant; the enterprise closely constrained by the pressures of market competition does not have that ability.

From this point of view, one characteristic feature of the modern corporation—its orientation toward growth and development and especially toward the novel-may be seen simply as a device for maintaining power. As products become established in the market and technologies familiar, the advantages of the leading producer over others may tend to diminish and competition to grow; continued product innovation helps to maintain the dominant position of the leading firm. In one perspective this is Schumpeterian competition—the process of creative destruction—and clearly desirable. But if the same firm or small group of firms continues in leadership, both because their present power enables them to spend more on product development and promotion than their minor rivals and their past dominance furnishes a great marketing advantage in leading consumer preferences in the direction of their innovations, the competitive character of the process is less clear. Further, in this situation, what limit is set on the costs of product development and promotion? Clearly, there is no strong market check which ensures that what consumers pay for novelty is in some sense close to its long-run supply price. Even new production instruments which result from a similar process, subject to the stronger restraints of sale in an informed market and a crudely calculable ceiling on what they are worth in terms of cost reduction, may still be produced and sold at costs substantially greater than their long-run supply prices when innovation is in the hands of dominant firm or a tight group of oligopolistic rivals.

Similarly, planned expansion over the long run is desirable; planned and steady investment programs make for stable growth. But the continuous expansion of dominant firms, especially when they have, as they often do, advantageous access to capital, including a large flow of internal funds, spells the maintenance of dominant position.

These same phenomena of growth and innovation in the context of the modern corporation present another set of problems. Resources are committed to expansion, to development of new products, to changing consumer tastes. Decisions as to how much to spend in these ways and how to allocate these expenditures are made inside the firm, relatively insulated from the processes of the market. The combination of a high proportion of internal financing with the inherent bias toward expansion and change leads to exemption of these decisions from the capital market tests of profitability; and even the test of profitability, alone, is not an adequate one in the circumstances of noncompetitive

markets. So the question of the economic rationality of the criteria governing these decisions is left open. Further, it is far from clear that the tests of the market are appropriate to determine the answers to these questions. We know in what sense the market test of profitability is the "correct" one to apply to investment in the expansion of output for a product sold in a (workably) competitive market. Is it equally clear that there is a meaningful market test of profitability which is appropriate to investment in changing consumer tastes or in developing new products?

The economic aspect of these questions is not necessarily the most important one. Whether or not the investment and development decisions discussed above are rational or efficient in an economic sense, the very fact that the managers of the modern corporation have a wide scope of choice in making them presents a problem. The chief virtue of a competitive market in practice is not necessarily that it leads to economic efficiency but that it constrains private economic power. Ideally, the businessman in the competitive market has only one set of actions open to him; any others will lead to failure. Practically, all markets leave some scope for policy choice, but the more competitive the market, the narrower the scope. In the evolving giant corporation, managers possess great scope for decision making unconstrained by market forces—nowhere more so than in their decisions with respect to future growth and change. These decisions have wide impacts—on workers, on consumers, on the community at large. Formally speaking, however, management in making these decisions is responsible only to itself. To be sure, there is a wide variety of possible repercussions of their actions which managements take into account in making their choices; decisions are taken in a certain political, economic, social environment, not in a corporate vacuum. But what management takes into account is what management decides to take into account, and however responsible management policy is, in the sense described above, it is responsible only in terms of the goals, values, and knowledge of management. No direct responsibility, made effective by formal and functioning machinery of control, exists. No matter how responsible managers strive to be, they remain in the fundamental sense irresponsible oligarchs in the context of the modern corporate system. To be sure, it might be argued that in other organized systems outside the corporate universe in which formal controls on executive power do exist, in fact substantive control is no greater than the modern corporation; i.e., in unions or in government. This argument raises a series of issues far outside the scope and limits of this essay. But, assuming for the moment the validity of the argument, it is wrong to imply that substantive control is all-important; indeed it may be nearer the correct assessment to assert the opposite: that the forms of control on power have a political significance which may far outweigh their substantive effect in practice.

The second standpoint from which we can appraise the social significance of the modern corporation is a much broader and less precise one than that of market power. I might call it the standpoint of social processes, to indicate that the central question I wish to raise is what impact does the characteristic style of behavior of the modern corporation have on the style of social processes in general.

The modern corporation rationalizes the economic process as far as it can. The factory system separated the worker from the instruments of production and effectively broke up the identity of household and productive unit characteristic of agriculture and prefactory handicraft activity. The modern corporation extends this process in turn to the capitalists; they too are parted from effective ownership of productive property; for them, too, the household and the enterprise are decisively separated. The modes of recruitment and promotion within the enterprise are more and more impersonal and universalistic in relation to the family world of property ownership. Again, the actual processes of management are carried on to the greatest extent possible in a rationalized and objective way. It is only somewhat fantastic to think of replacing the managerial hierarchy with an appropriately complex computer built so as to learn from its own mistakes, so far as its decision-making functions go.

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Yet at the same time, the modern corporation changes the substance of economic activity in such a way that the relevance to its activity of the basic notions of economic rationality becomes doubtful. In a world in which tastes are substantially formed and rapidly changed by sellers, concepts of efficiency which rest on satisfying given consumer preferences lose their sharpness. While new products are created, old ones are in effect destroyed, not just displaced by consumer preference for the new. On the cost side, the new plasticity of technology under the efforts of organized applied science again dulls the edge of the notion of a best technique. Seek, and ye shall find. New techniques are to be had for the (costly) asking. The question becomes, what shall we ask for? If products were fixed, this part of the problem might be manageable, taken alone, but the intimate association of new techniques and new products makes this a poor consolation. The broader the scope of research, the greater its quantitative importance, the more the output of anything new is jointly supplied with that of everything new, and the less close is the relation between a particular output and its costs on which the rationale of efficiency rests.

Further, to the extent that the modern corporation becomes an in-

stitution a substantial part of whose activity is devoted to self-maintenance and growth and to the creation of benefits for its permanent "membership," the less clear becomes the distinction between inputs and outputs, which is central to the notion of an economizing process. The rationale of the market is applicable to a process in which inputs and outputs are distinguishable, and inputs are viewed as potentially transferable among alternative outputs, which, in turn, are competing salable products. But if inputs and outputs are tied together in an indissoluble bundle, so that the one is not transferable and the other not salable, we are dealing with a way of life, not a production process.

The spirit of rational operation is not the peculiar property of business enterprise; it can be applied to any organization to the extent that its aims can be expressed explicitly and in quantitative terms. Conversely, the operation of a business enterprise becomes less clearly subject to rational criteria when the question which its management seeks to answer becomes: will it (ultimately) be a good thing, instead of, will it pay (soon)? We classically contrast favorably the operation of business with that of a government department aimed at promoting the public welfare. But the soulful corporation becomes less and less distinguishable, except in the matter of formal control and management responsibility, from the socialist enterprise if the latter operates under instructions to serve the public welfare but not to rely on the public treasury. They share common structural features: market power and a very long decision horizon—although typically the socialist enterprise as observable to date excels in both directions.

Even as it transforms the substance of business in such a manner as to rob the business spirit of its former significance, the modern corporation operates to spread business valuations and business ideas widely through the whole society. It does this most obviously through the mass media, the tone of which is set by the themes of sales promotion. But the more subtle effect of membership in the corporate institution is probably more important. Rentiers, entrepreneurs, technicians, clerks, and workers once stood apart from each other and from the businesses to which they were economically connected, in part because of their mobility between firms and jobs and in part because of the greater importance of other social institutions in shaping their attitudes and habits. Increasingly, membership in the modern corporation becomes the single strongest social force shaping its career members in the whole hierarchy above the production line. For various reasons, one of which is that membership has gone least far in their case, this is less true of production workers; but changing technology may diminish the importance of this distinction. The older and more varied types are disappearing, to be replaced by one or two types: the career bureaucrat (managerial) and the career worker. And as the career bureaucrat, in the interests of good citizenship which the modern corporation promotes, participates in voluntary organizations, local community activity, in national government, he carries everywhere with him the spirit of his corporate home: rational activism devoted to growth, progress, and efficiency, however difficult these may be to define in the relevant context.

# DISCUSSION

Corwin D. Edwards: I have little to say about Mr. Kaysen's admirable showing that the good intentions and public spirit of corporate management, taken alone, cannot solve the problems of power and efficiency that confront us where corporations are large and few. To make this showing, he found it necessary to assume the soulfulness of the large corporation; and, though I think he has overstated it, there is no need to quarrel with his statement. Obviously, however, insofar as powerful companies are not soulful, their behavior is likely to express the familiar patterns of monopoly. Thus, whether such concerns are soulful or not, public policy would still do well to minimize their power.

Professor Latham's telling critique of Galbraith, Mills, and Berle does not need to be criticized in its turn; nor do I wish to embellish his delightful sketch of the way in which a new state might arise above Mr. Berle's sovereign corporations. However, Professor Latham himself appears to accept an oversimplified view that government is merely the expression of the interplay of the interests of groups that support it. This interpretation ignores the influence of tradition, the limitations of law, and the deflecting interest of the governmental bureaucracy itself. I once attended a party with a New Dealer who had been out of office but had just been appointed to a high government post. He began the evening by asserting that government "is just another bunch of fellows," but later, after beginning a remark, he stopped and said, "I forgot I mustn't say that any more. I'm a government official now." Apparently he felt, and I think correctly, that his assumption of official status required him to accept certain limitations and duties that belonged therewith.

Dean Levi's paper is as hard to summarize as the contents of a fruit cake. If I have understood him correctly, he thinks that the antitrust laws do and should confine themselves to attack upon situations in which monopoly power is clear and important. As to lesser degrees of monopoly, his view is somewhat like that of Trilby, who sought to excuse the production of a baby out of wedlock on the ground that it was such a little baby. He would not apply the law to firms that are dominant in the sense that they can affect (or perhaps even control) market prices, unless this dominance appears unmistakably in a major industry. Neither would he apply the law in oligopoly situations. The effort to do so, in his opinion, is converting the antitrust laws into regulatory statutes.

Apart from his controversial view as to public policy, Dean Levi's position seems to me to have a faulty focus in two respects.

First, it assumes that the power of great companies is derived entirely from some degree of monopoly power, which can be roughly measured by their percentage of particular markets. But a large enterprise may derive power also from its differential bigness as compared with the concerns with which

it competes or trades. It may derive additional power from its total size, which brings it financial strength, the ability to occupy many different markets, and the capacity to engage readily in nonmarket activities that consolidate its position. Professor Kaysen's picture of the powerful big corporation includes much that does not fit easily into our traditional concept of monopoly power. When government uses the antitrust laws against large corporations whose monopoly power is narrow or dubious, these concerns are likely to have substantial amounts of power of the other two types. Prosecutors and economists alike tend, with Dean Levi, to treat such cases as though they raise problems of simple monopoly. The conceptual model used is only partly appropriate. But the power against which the attack is directed might seem both clear and important if it were correctly analyzed.

The second respect in which Dean Levi's analysis seems to me out of focus is that he has failed to distinguish between the Sherman Act and precautionary legislation such as the Clayton Act. The Sherman Act condemns collusion that already exists and monopolization that exists or is being attempted. By contrast, the Clayton Act forbids acts that have a reasonable probability of producing anticompetitive effects in the future. Where such effects are not to be anticipated, the same conduct remains lawful. Prophecy is inherent in the definition of the offense; and, since a probable result is sufficient to condemn the behavior of an enterprise, it is inevitable that from time to time something will be forbidden that would not in fact have produced the objectionable result if it had been allowed to continue. Such precautionary laws are inherently more controversial than laws which, like the Sherman Act, forbid consummated offenses. By their very nature, the precautionary laws are regulatory. Their growth in importance, rather than the application of the Sherman Act to the lesser offenses to which it has been applied, should be held responsible for the regulatory element in antitrust policy.

Whether these precautionary regulations are worth their cost can be argued interminably. I do not wish to discuss that broad question here. However, the merger law upon which Dean Levi has concentrated his attack seems to me to be the most defensible part of the precautionary legislation. When monopolization is attacked under the Sherman Act, the dissolution, divorcement, or divestiture that may be needed to terminate it are difficult to apply. At best, such drastic action creates temporary disturbance in the industry that has been monopolized. Often competition is restored only partly, either because there is no way to unscramble the eggs or because the courts are reluctant to take the broad responsibility inherent in the establishment of new types of industrial structure. At the most, dissolution, divorcement, and divestiture can be applied sporadically in a few instances. They are not remedies suited to general application throughout the world of large business.

This means that if the danger of monopolization is more than sporadic, one cannot rely solely upon such corrective action. Dean Levi thinks that concentration has not increased since 1904. Many of us believe that, though the concentration figures are inconclusive, their most probable meaning is that we are experiencing a slow but significant increase in concentration. There

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is general agreement that in many industries concentration, whether growing or not, is already high. Precautions to prevent concentration from reaching monopolistic levels are appropriate to such a situation.

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The precaution provided by the merger law commends itself primarily because it is preferable to the available alternatives. The desire to grow is a healthy corporate incentive with which we should not interfere. The establishment of an across-the-board limit on bigness is impracticable even if it were desirable. Of all forms of growth, the union of corporations already established is the one most likely to reduce competition and the one least likely to contribute to efficiency. Since the merger law prohibits mergers only where an anticompetitive effect can be reasonably foreseen, it need not interfere with most of the harmless mergers. As in the case of any precautionary law, this statute, if fully applied, will occasionally result in a false forecast and thus prevent a merger that would not have impaired competition; and it will occasionally prevent a merger that would have contributed something to the efficiency of the industrial process. Similarly, the speed limits of our traffic laws prevent some motorists from proceeding at high speed, even though in doing so they would have caused no accidents and even though there is waste involved in keeping these motorists longer upon the road. The significant question is not whether such results are incident to the merger law but whether the dangers of monopolization can be avoided by devices that cost the community less. The merger law appears to me to be the best of available alternatives.

Ward S. Bowman, Jr.: Dean Levi's summary of the monopoly problem in terms of the disease-cure dilemma will suggest different solutions to hypochondriacs and non-hypochondriacs. To some it will seem important that the economy not be judged healthy because it has been sicker before. Others will rue the shortage of competent diagnosticians. Still others will not share his concern for the possible effects of widespread experimental therapeutics.

There has been much discussion about what if anything should be done about the few large firms comprising an industry. An important question raised involves the propriety of applying the power rule of the Alcoa case to firms producing less than 66 to 90 per cent of an industry's output. Mr. Levi stresses the dangers of pressing in this direction, pointing to the fact that the farther one goes the greater are these dangers. Several firms may compete and they may be of efficient size. Measures of relative size are not necessarily measures of power. Still the probability seems great that increases in numbers will be accompanied by decreases in power. The more difficult question is the compatibility of greater numbers with efficiency. And economic efficiency does not lend itself readily to measurement.

Stated baldly, correcting an unknown amount of power at the cost of unknown inefficiency hardly sounds attractive. Yet, with the possibility of widely varying definitions of a market, the same kind of difficulty is present in weighing the power of the single firm. One single firm in a narrowly defined market may be less powerful than one of three or four in a broadly defined market. And convincing measures of demand cross-elasticity are hard to

come by. Some undoubtedly will predict that there is no proper place for the application of a power rule after the Cellophane case.

Perhaps a strong inferential case can still be made for an almost arbitrary rule with respect to numbers selling in markets defined or limited in terms of a substantial break in close substitutes, frankly running some efficiency risk. Such a rule would avoid the kind of economic tinkering by administrative experts involved in those ancillary antitrust statutes relying on incipiency notions.

Economists (or others) are not likely to be consulted about swapping the "shoring up" statutes for a stronger Sherman Act. Mr. Levi's thoughtful analysis suggests that these are not necessarily to be viewed either as complements or as substitutes.

In a recent article by A. Director and E. H. Levi, "Law and the Future: Trade Regulation," the point was made that "...large absolute size, of course, carries with it a power of its own. But it confuses concepts to call this monopoly power." (51 Nwst. L. Rev. 281, 284, 1956.) The nature of this nonmonopoly power arising from mere size, perhaps some sort of political power, has been mentioned often but analyzed little. Political science might be expected to provide some useful insights here. Consequently, even though Professor Latham has not been assigned this particular task, I have attempted to read his paper particularly for references or inferences about this kind of noneconomic power. It tentatively suggests to me that both economic and political power must deal with relative rather than absolute power in somewhat the same manner.

Economic (monopoly) power derives from relative size, in markets where close substitutes are few, although this is far easier to define than to measure. Professor Latham's criticism of Galbraith, Mills, and Berle is in terms suggesting that an acceptable political power theory is deficient if it recognizes only one or several power sources irrespective of whether they are countervailing. Here, as is the case with economic power, there would appear to be need for careful appraisal of close substitutes. It may well be that high concentration ratios will not appear in the "voter appeals industry" when the political market is properly defined. "The separate and selfish interests of mankind," said J. S. Mill in his Of Representative Government, "are almost always divided." (Special Selections, Henry Regency Company, 1949, page 118.) An explanation is yet needed for that special noneconomic power which is so confidently said to derive from mere size.

Professor Kaysen discusses the soulful behavior of the powerful firm. There has been an abuse theory of monopoly for so long that perhaps equity requires an equal run for a disabuse theory. No prodigious intellectual leap is required from Ida Tarbell's wickedness to Carl Kaysen's soulfulness. Monopoly in the economic sense of "bad" allocation of resources is not stressed by Kaysen. And it is clear that his "good" (soulful) is not the definitional opposite of the foregoing bad of economics. Nevertheless, the implication is clear that the goodness of the modern corporation arises from monopoly power not used to maximize profits.

The characteristics with which Kaysen endows the modern corporation-

including widely dispersed ownership, broad managerial responsibility, good labor policy, wise community relations, and rapid product innovation through research—may be multiple goals at odds with profit maximization. They may, however, be means of achieving maximization of long-run returns in the light of current law and opinion. This raises the question of whether or not the characteristics found must be attributed to monopoly power. Suppose we could all agree upon a long array of corporations ranked in terms of descending monopoly power over a broad range. Are these characteristics Kaysen finds capable of application, and if applied, would one be able to find direct and significant correlation?

I am under the impression that the ease with which these typical characteristics are laid at the door of monopoly arises in no small part from the too easy assumption that all of the large modern corporations, unlike their smaller counterparts of yesteryear, have substantial market power. It has become popular to say that the economy is behaving in brazen defiance of all the rules (by which economics tells us what to expect). It might be useful to pose an alternative hypothesis. It would be consistent with the fact that there are no reliable studies showing that the growth of the market has not at least kept pace with the growth of firm size, while at the same time the range of close substitutes available to consumers has been expanded enormously. This hypothesis would state that the structure of the American economy does not now and never has conformed to the ideals of a truly competitive order; yet the elements which fairly conform are so predominant that the economy operates in substantial conformity with, not in brazen defiance of, the basic rules of the market place.

This skeptical view of the Kaysen thesis that the modern corporation differs only formally from socialist enterprise exposes my images. I must plead guilty to being one of those primitive tribesmen, described by Professor Boulding, who cling to the bows and arrows of supply and demand.

CHARLES E. LINDBLOM: The wide scope of Mr. Kaysen's paper suggests to me that with our "monopoly problem," so defined, we economists have been like the political reformers of the turn of the century. They were intent upon "good," by which they meant largely honest, government. It finally became apparent to them that, on the one hand, honest government is not enough and that, paradoxically on the other hand, honesty in the ordinary sense is sometimes an undesirable constraint on political leaders. As a result of these and other complications, they shifted their objective to the larger idea of responsible government.

Most of us have not yet made the comparable shift from an interest in the competitiveness of corporate behavior to an integrated interest in the several critical dimensions of corporate behavior, as outlined in Mr. Kaysen's paper. We have analyzed monopoly in substantial isolation from these other aspects of corporate behavior and vice versa. I suspect that these aspects are now so interrelated—as are the several intertwined aspects of responsible government—that we cannot any longer factor them out as we have been doing.

Perhaps, then, the monopoly problem as a major focus for economic analysis is now obsolete. Perhaps we could better employ a larger, even if presently vaguer, concept as an analytical focus—something like "responsible" corporations, which we would then have to define.

The larger focus requires improvement in theoretical skill in handling the corporation. Here I turn to the larger significance of Mr. Kaysen's paper. It derives from the theme of these meetings: the significance of institutional and ideological changes for economic theory and policy. On the basis of the institutional changes Mr. Kaysen identifies, it would not be hard to argue that, unless theory grows to embrace those aspects of the corporation he discusses, it will be stunted. It will continue to occupy a same small corner of what he has shown to be an expanding universe. I say this because economic theory is relatively incompetent to analyze the major dimensions of the corporation that Mr. Kaysen has identified. And, failing to come to grips successfully with the corporation, which is central to economic life, theorists must confess a general disability not limited to the monopoly problem.

Still, a tight but limited theory may be preferable to a loose, overly ambitious one. Perhaps, therefore, Mr. Kaysen's multidimension corporation has no significance at all for the development of theory. To be sure, his paper is marked by originality. But it appears to be one more in a long line of provocative essays and books that have failed to shake theorists much in their disposition to treat the corporation simply as a maximizing individual. I mention Veblen, Berle, Rothschild, Gordon, and Neil Chamberlain to indicate the variety. If the structure of formal theory has remained impregnable to these and many other attempts to breach it, will it now yield to Mr. Kaysen's suggestions?

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We will be tempted to applaud but never yield to Mr. Kaysen for several

First, our present concept of the corporation is less troublesome than his. The concept of the corporation as a fictitious person makes this unfamiliar giant in our midst an ordinary creature like everyone else, requiring no special developments in theory. What we do not seem to want is Mr. Kaysen's new concept—not a person, not a government, not a proprietorship—but the corporation as a corporation—an organization unique in significant ways. For if we were to accept his concept, untold theoretical complications would ensue.

Secondly, the corporate soul would also pose great difficulties. If anyone smiled at Mr. Kaysen's soulful corporation, it is not surprising in view of the frequency with which theology has been called upon to throw a white cover over corporate sin. But Mr. Kaysen has a point: The corporation has assumed many new responsibilities that do not fit into simple profit maximization. But we can recognize this fact only at peril to the ease of manipulation of contemporary theory.

I want to add that the corporation is soulful in a second sense—in its capacity for liberating itself through self-deception. We are never so reprehensible as when righteous, never so unjust as when being just. The enlarge-

ment of corporate personality that Mr. Kaysen captures in the term "soulful" encompasses, for example, the capacity to do confidently in the name of industrial statesmanship what a soulless corporation would hesitate to do under the stigma of monopoly.

The implication of this aspect of corporate soul for theory is that it is difficult to distinguish between the contribution of emerging codes of corporate conduct to corporate responsibility, on one hand, and the contribution of emerging corporate self-righteousness to misconduct, on the other. Yet it is just such a distinction for Mr. Kaysen's kind of corporation that we have to make. Little wonder that we shall try to reject him.

A third reason for throwing off Mr. Kaysen's remarks are the two counts on which the modern corporation has changed the character of economic calculation. On the first count, he makes the familiar point that "in a world in which tastes are substantially formed and rapidly changed by sellers, concepts of efficiency which rest on satisfying given consumer preferences lose their sharpness"; but he then goes on to show that institutional developments give this criticism of theory new relevance. I think this point hits where it hurts. Our theoretical insights might gain enormously if we set to work on the assumption that the pattern of production is the major influence on the pattern of consumer choice, as is more obviously true in music and the arts. But having fought the dependence of choice on production as less than a fatal objection to theory for all these years, we would invite confusion by accepting the objection now.

Mr. Kaysen's second reason for believing that economic calculation has been significantly altered is that the distinction between input and output is blurred by a corporation's assuming responsibilities to its "membership." I think this point, too, strikes very deeply. But, again, one can treat it lightly as an interesting qualification to theory rather than admit it is a more fundamental point.

Let me now finally consider these points taken together. In all seriousness it is no doubt true that if we as economists were to take account of the many dimensions of the corporation in our theory, we would take on a very great burden. It would mean that we would lose some of our professional distinctiveness and that we would become social scientists with specialization in economics rather than economists.

For many decades, we had little to gain and much to lose by taking on such a burden. In a limited area, we made theoretical progress outstanding in the social sciences. What we left out of our work was what neither we nor any other discipline could handle well anyway, and we would have dissipated our energies by trying to do too much. But now I think we can assume the new burden. For we can make progress with techniques now being developed in the other social sciences.

We may fail to do so, however. For I fear that economics is today becoming the splendidly isolated social science. Except for the mathematical and statistical economists, the discipline stands largely apart from advances which the other social sciences share. In methods of concept formation, in explica-

tion and testing of field research methods, in formalization or codification of what might be called qualitative methods, in skilled use of particular concepts, like role, that have to serve as work horses for all the social sciences, and finally in developing a common language, the other social sciences have remarkably converged and are probably in advance of economics.

The final implication, then, of Mr. Kaysen's paper is that we would do well to join the other social sciences. We can join them to our great advantage in grappling with the kind of problems Mr. Kaysen poses. And if we do not, our past accomplishments will become our prison.

# THE IMPACT OF SOME NEW DEVELOPMENTS IN ECONOMIC THEORY: EXPOSITION AND EVALUATION

Although neither of the main papers by Tjalling C. Koopmans ("The Significance of Activity Analysis and Programming for Economic Theory") and Herbert A. Simon ("Economics, Organization Theory, and Decision Making") were available, the discussion papers are published below, since they contain sufficient review of the problems involved to make their criticism and comment intelligible.—Editor.

#### DISCUSSION

SIDNEY WEINTRAUB: Though I have not seen Professor Koopmans' paper, three weeks ago I was blessed—and burdened—by a 165-page manuscript on which he helpfully noted some 115 pages as his sample universe. If there seems some conformal lack in our coverage, solace may be derived in the illustration of the inapplicability of game theory to co-operative ventures.

Koopmans has sought to demonstrate that the theory of convex sets, relevant in activity analysis, can be applied to reveal "the common logical structure of received economic theories of quite diverse origin." Commendably, he has held out the olive branch of communicability between his mathematical confreres and his literary brethren, walking part of the way with Bertrand Russell who recently observed that he now writes in plain English since everyone knows he can use symbolic logic. To justify his "formal model construction" and advocacy of the postulational method, Koopmans affirms "a belief that . . . economics as a practical art is ahead of economics as a science." Although I would not know how to test this proposition or am even sure that it has meaning, serious work on fundamentals needs no defense. And Koopmans' work is serious and scientific in the best sense.

Arguing for the new tools, he observes that "the literature of an entire period almost completely ignored . . . the impossibility of consuming negative quantities of goods and of rendering negative quantities of labor, or . . . running production processes in reverse." Perhaps the repeated warnings are necessary for the purely (and simply?) mathematically-minded. Have economists really suggested consuming what was not there, or that the decomposition of outputs would restore the original inputs, or that production could take place with negative man-hours of labor? At this level he must expect some impatience from his literary colleagues. Parenthetically, sometimes negative man-hours do have a positive productivity: in the "racketeer problem" or the "owner's son or brother-in-law situation" output may be enhanced by paying them to stay away from the plant. While not the typical problems, they do disclose that even precise postulates may exhibit ragged edges.

Koopmans opposes the use of the calculus—and the work holds a plea to forget the partial derivatives and bordered determinants with which many of us made our peace—because it is a "myopic instrument" which "served only to compare the would-be-maximum position with . . . its immediate neighborhood." Still, as Marshall argued, we may find only neighborhood-equilibrium data. If so, "local maxima" are all we can talk about. Also, because of uncertainty and a lack of operational experience, entrepreneurs may be wary of recommendations for large production changes. Techniques will have to suit facts so that conflict here can be fruitless.

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By aid of a theorem on the summation of sets, "trivial to the mathematician" but "a basic tool for the economist," Koopmans deduces that in a firm "if each department head acting independently chooses the productive activities... so as to maximize the profit on its net output bundle, this will ensure profit maximization for the plant as a whole." I confess to uneasiness with this, for the very organization and enveloping of separate departments within the firm must largely be due to their interdependence rather than independence. Further, the concept of profit maximization for each department is often distressingly vague. If the independence postulate is to be taken literally, maybe we have the clue to an attack on corporate size and a whittling down of the economic Goliaths.

Set theory for Robinson Crusoe frightens me; I had thought we had given Robinson a decent burial with remembrances confined to ceremonial observances in our preoccupation with a social economy. Equally baffling is to find his supply and consumption decisions separated and a price system imposed on him, with different prices in each sphere as if he were deceiving himself and knew it. Though I suspect I understand the motive behind this, tools ought to fit the job; a bull-dozer is awkward in a flower pot. Doubts are compounded with the remark that Crusoe's capital formation "would require technicalities of reasoning transcending the expository purpose of the present essay." More impressive is the showing of possible kinks and corner maxima in the utility function and the need for inequalities among the equilibrium conditions. The latter amendments have been made and ought be more frequent.

Similarly, it is easy to repress excitement at the finding that prices and decentralized decision making utilizes incentives and achieves an economy of information (italics his), a view reasonably well established since Adam Smith—or, to a later generation, since the 1930 debates on socialism. Except to startle the mathematician, it adds little to specify the formidable equational system in the absence of prices. Great as is the computational problem, fresh fact-gathering and processing might prove even more unwieldy. I doubt that these matters comprehend serious contemporary issues in economics or that we need set theory to apprehend their enormity. Mastering mathematics for this purpose might be likened to learning German just to read a fine translation of Adam Smith. Likewise, despite the virtuosity in the statement of the Pareto optimum and its competitive implications, the range falls short of the more carefree literary analyses when increasing returns, external economies, and the interdependence of tastes are explicitly ignored.

The list, which can be extended, is a steep price to pay for marginal rigor. On the remark that it is now possible to abandon supply and demand as analytic tools, aware that Wicksteed once demonstrated that supply was merely a form of implicit demand, my surmise is that these concepts (or their equivalents) will linger a while longer, for a following passage observes that "the emphasis is entirely on the existence of some set of compatible choices." Too, I recollect the emphasis on the "incentives" and "economy of information" through the use of the price system.

If I have rebelled at these exercises to put economics under the sovereignty of sets, the sentiment does not extend to the discussion of programming, where the accomplishments are too obvious, the industrial interest too persuasive, and the flurry of excitement in university industrial management departments too uncommon and infectious to permit any denigration. In this Professor Koopmans has been a pioneer, and the very lucid account that he has in preparation ought to stimulate a wider interest in his contributions. I have but one or two remarks.

Objecting to the production function because it already presupposes output maximization, he recommends that we start with "the range of technological alternatives." This is a criticism which rebounds, for his "process" also presumes a fast relation between input and output, almost regardless of organization, managerial acumen, or labor discipline. On these hoary matters, not to mention capital aspects, the mathematical statement may be less flexible than verbal accounts. Activity analysts must live with the charge of being mechanistic, even if it is not always a harsh indictment.

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For mathematical convenience, Koopmans postulates constant returns to scale. Yet activity concepts have been used to urge that divisibility postulates do not insure constant returns to scale (see H. Leibenstein, Quarterly Journal, November, 1955). Also, by excluding the interaction of processes, despite the remarkable results secured by this hypothesis, it is not fully adequate for explaining the creation of a multiple-product firm or the degree of its integration, to say nothing of interdependencies between consumption and production, as in macroeconomics. Literary economists will also want more details on temporal-interactions and period-bounds to cost minimization and profit maximization despite any grief they may cause our mathematical friends.

Maybe the main by-product of the current demand by business firms for programmers and the opportunities afforded academic personnel will be in the return flow of production data. Further, as economics in the past has chafed under the bit of unrealism, the conditioning of businessmen to an undiluted profit objective may, whimsically, be our Trojan Horse for fitting the facts to our analyses even while we remain obdurate against trimming our analyses to the facts.

James S. Earley: Since Professor Simon's paper is, in his own words, "a compressed summary of an alarmingly wide range of topics" and I have had only a short time to study it, I shall take unusual liberties in my comments. First, I shall direct some of my remarks to his earlier works and the work

of others he has influenced, which I have had an opportunity to study more carefully. Secondly, I shall confine my observations largely to what Simon terms the "cognative" aspects of organizational behavior; namely, the explorative, communication, and decision-making processes of the organization. Thirdly, I shall speak of only one type of organization; namely, the large contemporary business firm, on which I myself have been doing research in recent years. Finally, I shall stress similarities and differences between his approach and conclusions and my own. This last feature was suggested by those who arranged the program.

Let me say first that I am on the whole an enthusiastic adherent of what Professor Simon calls his "heresy." Specifically, I agree with him that the classical theory of the firm suffers seriously from having failed to examine its organizational principles and decision-reaching processes. I readily agree, too, that the business firm cannot be assumed to operate on principles of "complete rationality," if only because of the wide gaps in its information and its computational infirmities. I agree with him that because of these infirmities—plus the need of maintaining internal cohesion—the firm cannot be viewed as striving to maximize anything (including profit) in the strict sense. In fact, my own theories are built on Simon's postulate that the business enterprise is best seen as being "intendedly rational."

I also hold that the "viability" theories of recent years do not remove the need for correct behavioral postulates, since in our rapidly changing world of highly imperfect competition short-run rather than long-run theories are needed, and reasonably definite behavioral postulates are requisite for generalizations, even on the macro level.

Finally, I too believe that study of the cognative aspects of organization behavior will help much to build a bridge between our traditional theories and more satisfactory ones. I myself came to this view through the influence of the late John R. Commons, who believed that what he called the "working rules of going concerns" furnished an important key to understanding the economy.

In all these respects I go happily along with Professor Simon on his heretical ways. Our differences lie partly in our approach or method and partly in our conclusions. I will try to treat these separately, though they are closely related.

Professor Simon's theories appear to me to be built more on biology and psychology than I think is safe in constructing a theory of a highly structured and conventionalized organization like the large modern business firm. In a recent work Simon contrasts the economist's traditional picture of rational choice with the problems of organisms having simple needs and environments and shows how much less exacting are the recuirements for problem solving by the latter. The behavior of the organism (the organization) is seen as represented by the temporal pattern of the rather blind search which satisfies these minimal requirements. The behavior of an animal in a maze is suggestive, but it can, in my judgment, hardly provide the backbone for a model of corporate business behavior.

Similarly in other work, following principles of biological "homeostasis,"

he has laid great stress on the minimum conditions requisite for continued participation of the individuals and primary groups in the organization. He is inclined, I believe, to make the sufficient conditions for this participation too great a determinant of what the organization will actually do.

Another major building block in Professor Simon's approach is communication theory. His associates, Messrs. Cyert and March, in applying this theory to the behavior of the business firm, have stressed the behavioral influence of the firm's communication network and the position of the decision-making unit. They argue, for example, that the "alertness" (and presumably the "rationality") of a firm's behavior will be positively related to: (1) the fewness of the "relay points" through which information is channeled; (2) whether information is channeled through a "sales-minded" or a "cost-minded" relay-point; (3) the fewness of the decision-makers; and (4) their being free to choose their criteria of decision.

I could not gainsay that the behavioral principles and the organizational features that Simon and his associates have concentrated upon are influential in business behavior. But I am inclined to believe that certain other principles and certain other features of business organization will actually be more determinative. Let me briefly list these.

First there are the analytical principles the firm employs in its search for opportunities and the presentation of information to those who make decisions. For example, does the firm's cost accounting and analysis stress average or differential costs? Are its budgets of the fixed or the flexible variety? What are the rationales of the reports and the analyses that are put before decision-makers? In two recent articles I believe I have shown that, actually as well as presumptively, such differentia in the analytical principles underlying cost accounts and reports have a quite significant effect upon business policy.

A second organizational determinant of business behavior is, I believe, whether plans and decisions are made in an unco-ordinated, ad hoc manner, or whether they emerge instead from systematic, co-ordinated programming. For example, is the advance budgeting of the firm only partial (e.g., for sales only), or does it integrate revenue targets, estimated current expenditures, production requirements, cash flows, and capital requirements? I am currently investigating the implications of differentia of this sort for the behavior of large firms.

A third important organizational variable, I suspect, is whether major decisions are made with the appropriate joint participation of persons in the organization having different responsibilities. For example, is there appropriate representation of production, sales, accounting-finance, and engineering-research functions in important pricing, product, and investment decisions? The possible relevance of looking at this aspect of decision making, in addition to those features stressed by Cyert and March, is suggested by the fact that whereas they hypothesize that "divided responsibility" and "group decision making" will lead to "passive" (and uncalculating?) behavior, some partial tests of data I have gathered on large multiproduct, multiprocess firms suggests that the economic "rationality" of decisions (as judged by the norms of econo-

mists) seems to be positively related to the adequate inclusion in the decision-making group of personnel with differing viewpoints, interests, and *expertise*. I am not sure, however, that further tests may not show that this relationship is only apparent, and I place little confidence in it at this time.

In short, I cannot but feel that those who are applying general "organization theory" to the economics of the firm are paying too little attention to the organizational peculiarities of business enterprise. What we economists need, I think, is not a theory of organization behavior, en generale, but a specific theory of the business organization and behavior—or better still, an evolutionary theory of what this particular type of organization is becoming. But I readily agree that I may be wrong in this judgment, and certainly many approaches are called for at this stage of our research.

I have more serious reservations concerning what appears to be the major economic theorem Simon arrives at; namely, that the business enterprise looks for merely satisfactory solutions of its problems and specifically seeks merely satisfactory profits. That his approach has led so directly to this conclusion is one of the facts that makes me especially doubtful that it is a satisfactory one. Whatever may be true of individuals or of other types of organization, I cannot square Simon's "satisficing" behavior with the behavior of the large-scale American business firm. I agree that the conventional notion of profit maximization and of general "optimization" must be modified. I contend this is carrying the change much too far. Let me briefly catalogue the main types of evidence that lead me to reject the "satisficing" postulate.

- 1. As a part of my research, I have made a study of recent management literature, both general and specialized, one of my hypotheses in doing so being that this literature will reveal the frames of reference and mores of advanced business management. A striking characteristic of this literature (except where public relations is an evident objective) is its systematic focus upon cost reduction, the expansion of revenue, and the increase of profits. There is, of course, much reference to standards and to the need of remedying unsatisfactory situations. But there is no evidence of polarization of satisfactory and unsatisfactory situations. The drive is always towards the better and frequently the best, not just the good. Like Samuel Gompers' ideal union leader, the exemplary man of management seems to have "More!" for at least one of his mottoes.
- 2. Secondly, my questionnaire studies of the practices and policies of leading so-called "excellently managed" companies lead me towards generally similar conclusions. I have published the major results of the first of these studies and will not review them here.
- 3. The third fact that makes me doubt Simon's postulate as applied to the firm is the rapidly growing use of economists, market analysts, other types of specialists, and management consultants by our larger businesses. The main function of most of these people is to help the firm reduce costs, find superior methods, choose the most profitable alternatives, and uncover new profit opportunities. As these sophisticated gentlemen gain in influence in business counsels—and I confidently believe they will—profit oriented ra-

tionality is likely to be more and more representative of business behavior.

4. Most of all am I impressed by the rapid development of analytical and managerial techniques that both stimulate and assist the business firms to find the least costly ways of doing things and the most profitable things to do. Operations research and mathematical programming are only among the more fancy species of this growing genus. There are also greatly improved ferms of accounting and budgeting, improved methods of market analysis, refinements in business forecasting, and interesting types of non-mathematical programming. The unifying character of these new techniques is that they seek to apply the principles of rational problem-solving to business planning and decision making.

Let me conclude by briefly sketching the notion of business behavior that seems to be emerging from my own studies. It falls somewhere between the old postulate of profit maximization and Simon's "satisfactory profit." It fully recognizes the limited informational and computational resources of the firm. It also incorporates his suggested concept of the "aspiration level" and a modified principle of "viability." My behavioral postulate could best be briefly defined as "a systematic temporal search for highest practicable profits."

The theory underlying it runs, very briefly, as follows:

The major goals of modern large-scale business are high managerial incomes, good profits, a strong competitive position, and growth. Modern management does not view these goals as seriously inconsistent but rather, indeed, as necessary, one to the other. Competitive strength and even survival, management believes, require large innovative and substantial growth expenditures in the rapidly changing technical and market conditions of the present day. Since growth by merger is hazardous and frequently impossible, large and more or less continuous capital expenditures are necessary. For well-recognized reasons, management wishes to minimize outside financing, so the funds for most of these expenditures must be internally generated. This requires high and growing profits above dividend levels. So, too, do high managerial rewards. High and rising profits are hence an instrumental as well as a direct goal of great importance.

With these goals and needs in view, advanced management plans for profit through time, using co-ordinated programs stretching as far ahead as practicable. The profit targets incorporated in these programs are sufficient to finance not only good dividends but also desired innovative and growth expenditures. The programs are revised frequently, as experience accrues and new opportunities are discovered.

The tendency towards profit maximization (i.e., highest practicable profit) appears in this system along several dimensions. In the process of revising and reformulating programs, more expensive and less profitable activities are pruned or dropped and cheaper and more profitable ones are added. Less costly processes and the more profitable product and market sectors serve as the standards towards which others are expected to converge or be replaced. By steadily selecting those methods and sectors that promise better returns, these standards are kept high and, if possible, rising. Finally, the

over-all profit and growth targets of the enterprise as a whole are raised through time, unless adversity prevents.

These goals and programs and standards, it is true, represent at any time certain "aspiration levels," and the efforts to satisfy them receive prime attention. But the two major points about them are that (1) they are likely to be hard to reach and (2) they will ordinarily recede (i.e., grow larger) through time. Even in good times the firm's aspiration levels, therefore, are fairly taut, and they are highly elastic upward. On the other hand, there is great resistance to adjusting profit and other standards downward, so that in bad times the business firm tries even harder to make the highest practicable profits.

I readily agree that I have sketched the behavior of what might be called the "exemplary firm" rather than the firm that is quantitatively representative of the present business population. But my main point is that the management techniques and the *expertise* that can validate my notion are developing rapidly, are increasingly being made available to business, and are being rapidly adopted by leading firms. Consequently, I suspect, the exemplary firm will be the representative firm of the future. If so, its behavior will be more rather than less appropriately analyzed by some of our time-honored theoretical notions, such as profit maximization. At any rate, I think it is best to build a good part of our theoretical model of the firm on the principles likely to be found in a good consultant's report or the logic of a problem in linear programming and to use Professor Simon's principles to explain special problems to which they may particularly apply.

JOHN R. MEYER: Professors Simon's and Koopmans' papers raise two essential questions. First, to what extent do the new developments embodied in activity analysis and organization theory constitute improvements on the older or prior analytical procedures used by economists? Second, what do these new developments portend about the interests, research techniques, and procedures of the profession? The first question has been rather extensively dealt with by the other discussants and I will indulge, therefore, only briefly in comparisons of the new and the old, limiting myself in this respect to matters useful in answering the second question.

The two developments in economic theory under discussion here are an interesting study in contrasts. Activity analysis represents the latest extension of the economist's long-standing interest in rigorously specifying an optimal behavior pattern under certain simplifying assumptions about the dimensions of economic activity, abstracting as much as possible from institutional considerations. Organization theory, on the other hand, can well be considered the culminating development in a veritable outbreak of dissatisfaction with traditional theories, particularly the theories of wage determination and of the firm. This dissatisfaction is at least partly due to consideration of what are perhaps best termed institutional factors.

The traditional or accepted theories date back to the middle and end of the nineteenth century when the tools of mathematical calculus first were put together with an elementary hedonistic psychology to construct explanations of economic behavior. The resulting models did not seem to violate the actual economic facts of the time. Since then, Western economies have become, of course, increasingly complex and economists have become increasingly cognizant of these complexities. A realization has therefore been established that today many pertinent utility and production functions are certainly not continuous or differentiable—and indeed perhaps never were. Even worse, growing doubts have come to gnaw at the collective conscience of the profession that perhaps simple hedonistic maximization does not adequately describe the behavior of economic individuals. At the very minimum, almost all are now convinced that whatever is maximized it must surely be something more complex than pure monetary gain. Consequently, the suggestion is increasingly made that even those most economic of all men, the entrepreneurial types, do not simply maximize pecuniary profits but rather "utils" of satisfaction that encompass not only a recognized penchant for money but also a desire for job security, craftsmanship, financial flexibility, managerial independence, etc.

Activity analysis and organization theory fit perfectly into this setting. Activity analysis constitutes an approach to the optimization problem that minimizes the role of the calculus and is more than amenable to discontinuities. Organization theory outlines an alternative explanation of the behavior of economic units, particularly applicable to the business firm, that dispenses with the assumptions of "global rationality" and profit or utility maximization. In their stead "limited rationality" and what Professor Simon has called (in other writings) a vector of "pay-off functions" are employed, thus incorporating into the model a diversity of objectives without needing the common denominator of utility.

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The two principal advantages of these innovations are greater realism and empirical adaptability. Clearly, linear programming has been established as a problem-solving technique of the first importance in practical applications to the engineering and economic problems involved in production decisions. Furthermore, its possible usefulness in the broader field of economic policy making likely will be more as a computational method for obtaining optimal solutions to certain policy problems than in clarifying the underlying economic and institutional problems and assumptions. This is no mean achievement, however, particularly for those managed economies that prefer to rely on centralized and direct controls over production and distribution rather than on the indirect methods of the free market mechanism.

Organization theory also would appear to possess substantial empirical possibilities and, indeed, probably provides a better synthesis and explanation of much recently observed empirical material about firm behavior than the traditional theory of the firm. Much of the observed instability and so-called "nonlinear" character of business reactions to changed conditions, for example, could well be due to events pushing the decision-makers through different aspiration levels or into a hierarchical reordering of the constituent items in their pay-off vectors. As Professor Simon points out, moreover, the whole notion of a multiplicity of constraints upon firm behavior that has

come into increasing favor recently is far more compatible with organization theory than conventional firm theory.

The full empirical promise of organization theory is not likely to be realized, however, if economists (or, more explicitly, econometricians) insist on applying the inherited statistical tools in an unimaginative, routine fashion. In particular, the mechanical application of the standard regression and correlation methods—powerful tools though they may be—could well prove insufficient. At a minimum, some experimentation should be undertaken to determine the applicability to economic research of the statistical tools developed by the other social sciences, particularly those like social psychology that have had a direct and substantial influence on the development of organization theory.

Two statistical approaches that would appear especially worthy of such testing are the oft-misunderstood techniques of factor and principle component analysis. Actually, under the general heading of factor analysis it would be somewhat more accurate to speak of a whole group of techniques, for while there is a definite generic type, the diversity within the group is quite marked. Indeed, it is this diversity that accounts for much of the controversy and uncertainty surrounding the subject.

The objective of a factor analysis is to identify from observable data the influences of psychological motivations or other underlying forces that are not themselves directly observable. The classic application has been the effort to discover from test scores different types of native abilities and intelligence. It has also been used in analyzing such diverse matters as election results, physical body types, indices of business activity, the properties of physical materials, and the agricultural crop productivity of different regions and nations. In studies of firm behavior its application would mean using the observed data obtained from balance sheets, income statements, and business reports to government agencies as the objective evidence from which to identify the underlying motives and objectives of managerial groups. For example, in a study of business behavior now being conducted by the present discussant, in co-operation with Professor John Lintner, the following "factors" have been postulated as possible influences on business decisions: (1) the usual objective of making profits, at least profits sufficient to pay a conventional dividend level and maintain credit standing; (2) a desire to retain a certain market share, which appears to be an objective of increasing importance in the planning of firms in oligopolistic markets; (3) a stagnation or senility effect that pertains to situations in which all parts of the firm organization seem to decline or decay simultaneously, with each new adversity contributing additional difficulty to existing woes; (4) a cautious financial attitude in which the dominant consideration of the managerial group appears to be the maintenance of a sufficiently liquid position to guarantee against all types of contingencies; and (5) an acceleration or general prosperity effect, generally associated with sellers' market situations, in which the central objective becomes producing goods almost for their own sake with only secondary consideration to financial, managerial, and other constraints. Unquestionably, this list could be extended and perhaps will be as our studies and knowledge of firm behavior expand and become more complete. At the present time, it serves primarily as a guide by which the broad hypotheses about business behavior embodied in organization theory and other recent models can be empirically tested with existing statistical tools.

And it is clear that there is still much to be learned about the behavior of economic organizations and actors. We not only need to know more about the actual objectives and motivating drives that condition economic decisions but we must also know more about such matters as the circumstances under which certain motives take ascendancy over others and when these diverse motives are compatible with one another and when they are incompatible. Thus, the immediate research goal should be the discovery of systematic relationships between human motivation and economic decisions, using the available research techniques not only of our own discipline but also of related fields. If this approach is adopted, a knowledge of underlying utility surfaces will be derived, if at all, only by inferring back from the discovered regularities, and the "global rationality," to which economists have so long been dedicated, will be recognized as having primarily a normative and not a descriptive value. This perhaps will prove less complete and intellectually satisfying to some but it is also likely to be a more rewarding and useful approach to the study of economic behavior than those now or previously employed.

# ECONOMICS AND CHANGING TECHNOLOGY

# THE ECONOMICS OF AUTOMATION

# By YALE BROZEN Northwestern University

This decade seems to be as worried about automation as the twenties were about mechanization. If we were to trace a history of fear of technological change, we could go back a century to the Luddites' fear of power machinery, half a millennium to the hostlers' and inn-keepers' fears of the stage coach, a millennium to the fullers' fears of mechanical fulling. If any fear of technical progress is justified, however, it seems that automation is the least to be feared among the many episodes of change human society has endured. It is likely to produce fewer untoward consequences even in terms of displacement, much less unemployment, than any previous set of new techniques.<sup>1</sup>

Automation is not a simple economic phenomenon, however, whose results can be categorized on a simple basis of "if automation, then this consequence." The effects of automation differ depending upon the forces which lead to its application. In order to understand what is happening and what will happen, we must use several categories of automation. In this paper, then, I will describe some characteristic varieties of automation. Case illustrations of each type will be provided and the usual consequences to be expected in each category will be described.

# Automation as Adaptation

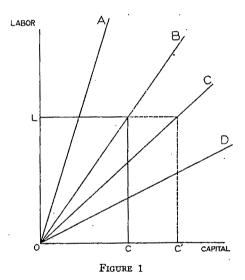
Much of the automation we are getting is the simple consequence of a rising stock of capital. As capital increases, wage rates rise. As they rise, it pays the individual firm to shift to capital-intensive techniques which were not previously economic. From the point of view of the firm, the wage rise makes the shift economic and forces it. From the point of view of the economy, the rise in the quantity of capital makes it possible and desirable.

"Detroit automation" typifies this variety of technological change. It is little more than carrying automatic manufacture a step further by the use of transfer equipment to move work from one automatic machine tool to another and interlocking these tools in order to get higher utilization. The technique was first used in 1927 by Morris Motors of

<sup>&</sup>lt;sup>1</sup> See Yale Brozen, "Automation: Creator or Destroyer of Jobs," Iowa Business Digest, February, 1956.

England. The method was technically but not economically successful at that time. Since 1927, wage rates have risen and machine tools have become more expensive. Now that real hourly wage rates have more than doubled their 1927 level, the saving of direct labor costs in operating machinery and transferring work and the saving of labor in building machine tools is sufficient to justify the investment in transfer equipment and interlock controls.

The situation, from the point of the economy, may be illustrated diagrammatically as follows. We can represent the technical alternatives facing a representative industry in the economy by rays on the diagram shown in Figure 1. The industry can choose among techniques A, B, C, or D. If the amount of labor and capital available in this economy to the representative industry is OL and OC, it should choose technique B to get maximum product.<sup>2</sup>



If the quantity of capital increases to OC', the industry should shift to technique C. Total production will increase despite no increase in the quantity of labor. Technique C may be taken as representing the more automatic technique.

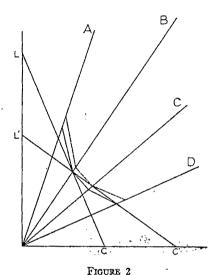
From the point of view of the firm, it will choose that technique which yields maximum product from the expenditure of a given budget. In Figure 2, the firm is faced with a budget line *LC* showing the amounts of labor and capital obtainable with its given budget. It will

<sup>&</sup>lt;sup>2</sup> See Y. Brozen, "Determinants of the Direction of Technological Change," American Economic Review, May, 1953.

choose technique B since the budget line touches the highest possible iso-quant at this point.<sup>3</sup>

If the quantity of capital in the economy increases, the price of labor will rise and the price of capital fall. The budget line will shift and it will have a new slope, dictated by the new ratio of wage rates to the cost of capital, shown by L'C'. This will dictate the choice of technique C by the firm.

When the Ford Motor Company began applying Detroit automation, it primarily took the form of a larger quantity of capital applied with the existing labor to turn out larger amounts of work. Despite the saving in machine tool investment made possible by increasing utilization



from 65 to 80 per cent, there was an over-all increase in capital requirements of about 25 per cent in the Cleveland engine plant where the technique was applied. There was a decrease of 22 per cent in the direct labor force required to operate machinery, but this was more than 50 per cent offset by the rise in maintenance personnel required with the new arrangement. Total man-hours used in the company for civilian production rose, partly because of a rise in output, partly because more man-hours were used per automobile to turn out a more complicated product.<sup>4</sup>

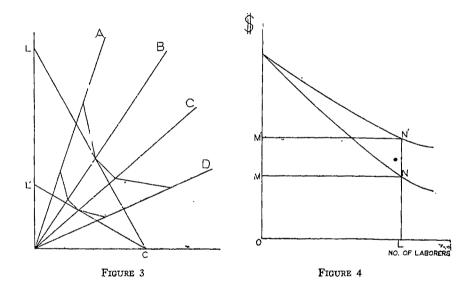
The techniques applied by such auto firms as Ford were not economic when tried in 1927 but have now become economic, for the firm,

<sup>&</sup>lt;sup>3</sup> See Y. Brozen, op. cit.

See the statement of D. J. Davis, of Ford Motor Co., in Automation and Technological Change (U.S. Government Printing Office, 1956), p. 57.

because of the rise in wage costs. This rise was, however, caused not only by growth in the quantity of capital in the economy relative to the work force. Technological changes in industries other than the automotive have also contributed to increases in the marginal productivity of labor.

As labor became more expensive as a consequence, the budget line facing the typical firm in the industry under consideration shifted to the L'C position shown in Figure 3. This, also, forced the typical firm to adapt its production structure and move to the use of technique C, the more automatic technique.

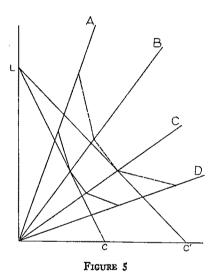


In terms of a Clark diagram, what has happened has been a tilting of the marginal productivity curve of labor. As a result of the rising quantity of capital relative to the work force and technological changes in other industries which raised the marginal productivity of labor, the right end of the curve has moved upward as shown in Figure 4.

Wage rates rose, in these circumstances, from LN to LN' for the given labor force, OL. The rise in wage rates forced the adaptations shown in Figures 1, 2, and 3 of the Detroit variety. This adaptation was not primarily a technological change resulting from inventions which shifted the production function in the auto industry but, rather, primarily a movement from one point to another in the existing production function.<sup>5</sup>

<sup>&</sup>lt;sup>5</sup> See Y. Brozen, "Invention, Innovation, and Imitation," American Economic Review, May, 1950, for a discussion of this distinction.

Another illustration of the influence of the combined forces of an increasing supply of capital and the rising marginal productivity of labor engendered by technological changes in other industries is provided by the Fairless steel works. Over \$100,000 of capital per man was invested in order to create a complex which would turn out about 300 tons of steel per man per year. If the conventional techniques employed in existing steel plants had been applied, the required investment would have been \$40,000 to \$50,000 per man with an average output of 160 tons per man per year. The tremendous quantity of capital invested per man would not be possible or economic in a society possessing less of this resource than our own. Nor could this investment be justified except on the basis of the high cost of labor (high marginal productivity in competing uses). As a matter of fact, the investment probably



would not be economic at the wage rates prevailing at the time the plant was built. Only because labor rates were expected to rise 30 per cent or more in the coming decade was it economic to use such large amounts of capital per worker at the time the plant was built.

The third force causing automation in an industry may be capital saving inventions applied in other industries which cause them to release capital. Its price will drop in these circumstances and cause the budget line to shift to LC' as shown in Figure 5.

Again, the firm will be led to shift to the more automatic technique, C, from its old technique, B.

This latter force does not seem to have been the prevailing net effect of technological change in the last decade. The price of capital seems

to have been rising rather than dropping. Automation of the adaptation type seems to have been the consequence of the rising price of labor rather than the falling price of capital. If anything, technological change in the last decade seems to have been capital using rather than capital saving, since the price of capital has been rising. It seems to have increased in the past decade despite the growth of capital relative to the labor force. However, this may be an illusion created by rising interest rates on debt capital. Interest rates may have moved upward because of the greater proclivity to use debt rather than equity finance and because of a greater willingness of savers to invest in equities. Over-all, the marginal return on investment may have fallen. If we were to consider return on equity as well as debt in measuring the price of capital, we might find that the price of capital has decreased.

# Automation Resulting from Invention

Some capital saving techniques are now being applied which are recent inventions (despite the net effect of technological change appearing to be the contrary). That is, the production function in some industries has shifted. Automation in these is the consequence of recent inventions rather than of shifting relative prices of labor and capital. Railroad classification yards using computer controls now being installed are of this character. The Conway yard now being put into operation by the Pennsylvania Railroad illustrates this category of automation.

An investment of 34 million dollars is being made at Conway, Pennsylvania, and nearby points to automate the classification of freight cars. Because of the more rapid handling of freight cars with this facility, it will save the equivalent of 13,000 freight cars. In other words, the same amount of freight can be moved with 100 million dollars less investment in rolling stock. The net saving in capital investment in railroad equipment as a result of this one facility will amount to nearly 70 million. There will also be some labor saved amounting to something between 200 and 250 men.

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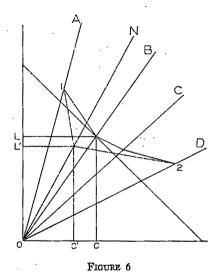
This illustrates a fourth force leading to automation. A new invention directly applicable to an industry which saves both capital and labor, compared to existing techniques, which are currently economic, will certainly be economic regardless of the current constellation of prices for capital and labor. It will be applied. This is apparent in Figure 6. Ray N, represents the capital-labor ratio required with the new technique. The dashed lines drawn to points 1 and 2 represent the new iso-quant after the invention of the new technique. If technique B was economic before, given the budget line shown for the cur-

rent ratio of the prices of capital and labor, then technique N will be even more economic. Of course, if the budget line were such as to strongly indicate that technique A was appropriate (because of the scarcity of capital), the new technique would not be economic and its invention would have no effect.

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Assuming that the new technique is economic in the circumstances of this society, how it affects the economy depends on several conditions. If the output of this industry were to remain unchanged, it would release capital in large amounts and labor in small amounts. About \$300,000 of capital would be released for each released laborer in the instance of our case. In view of an average \$13,000 of capital used per



laborer in other industries, this would increase the ratio of capital available per laborer elsewhere. This would lead to a change in techniques in other industries for reasons which show in Figure 5. Marginal productivity of labor in other industries, and wage rates, would rise. Automation in other industries would occur as a consequence of what was referred to above as the third force causing automation. We might say, then, that automation of this type breeds further automation.

If the automating industry is faced with a sufficiently elastic demand, it may release no labor while still releasing capital, assuming that the capital-labor ratio prevailing in the industry for additional capacity is sufficiently low that all the released capital is not required for added capacity. The closer the ratio in which capital and labor are released, at constant output when applying the new technique, to the

ratio required in adding capacity, the less effect the technique will have in increasing the capital-labor ratio in the balance of the economy and raising marginal productivity and wage rates of labor.

If the demand facing the industry is very elastic, it may reabsorb all labor saved by the new technique and additional workers from other industries. If the ratio of initially released capital to labor is very high relative to the capital-labor ratio for additional capacity, the industry may absorb labor and release capital simultaneously. This would have a very strong effect in raising marginal productivity of labor in the balance of the economy, particularly if the capital-labor ratio for additional capacity is below the average of that found in the balance of the economy. The lower the ratio of initially released capital to labor and the higher the ratio of capital to labor for additional capacity, the less likely we are to find rising wage rates. If the capital-labor ratio for additional capacity is very much higher than the rest of the economy and the industry absorbs enough workers from other sectors, the capital-labor ratio in the balance of the economy could be forced downward and marginal productivity and wage rates would fall.

The same invention, then, could produce opposite effect depending upon three factors. The first is the elasticity of demand facing the industry. The second is the ratio of initially released capital to initially released labor (released resources being measured in terms of the before and after amounts required at a given rate of production). The third is the ratio of capital to labor required for added capacity after the new technique is introduced. The higher the elasticity of demand and the higher the capital-labor ratio for added capacity, the more likely a reduction in either wage rates or employment with a given ratio of released capital to released labor. The lower the ratio of released capital to released labor, the more likely this consequence. On the other hand, the higher the ratio of released capital to released labor and the lower ratio of capital to labor for added capacity, the more likely there will be a rise in marginal productivity and wage rates with any given elasticity of demand. Also, the higher the ratio of released capital to labor, the lower will be the ratio of capital to labor for added capacity and the more likely will be the occurrence of the latter wage result.

The more capital saving a new technique is, the more favorable will be the results in terms of wage rates and employment. There is little ground for Keynesian fears that the economy cannot employ the additional capital, at least in present circumstances. Ex ante investment plans for 1956 have had to be curtailed, ex post, from 39 to 35 billions for lack of this factor. Even ex ante investment plans have been re-

stricted by lack of capital As Ralph Cross, of the Cross Company, indicated in his statement before the Joint Economic Committee, the amount of mechanization envisaged in the plans his company prepared for the Plymouth division of the Chrysler Corporation was reduced because the customer found that the cost of the capital would be excessive. Instances of this sort could be multiplied manyfold.

Another category of automation is the case of the new technique which is primarily labor saving rather than capital saving. A new technique which exemplifies this case is the automatic method for machining cylinder heads. The old method required six machines costing \$240,000 and six operators. With the new method, one operator with a \$230,000 machine can turn out the same amount of work.

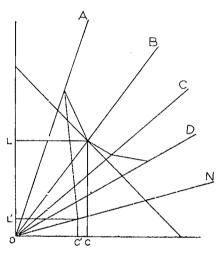


FIGURE 7

Figure 7 shows the negligible capital saving and large labor saving resulting from a technique falling in this category. Ray N represents the capital-labor ratio requirement with the new method. The solid and dashed line iso-quants show the productive factor requirement effect for a given output. Labor requirements drop from OC to OL' with little change in capital requirements.

If the demand facing this industry is sufficiently elastic, its total labor requirements will increase. Also, it will use a larger amount of capital per laborer than previously. This means, that, under static assumptions, it will absorb capital from other industries. If it absorbs capital in larger amounts per laborer absorbed than the prevailing

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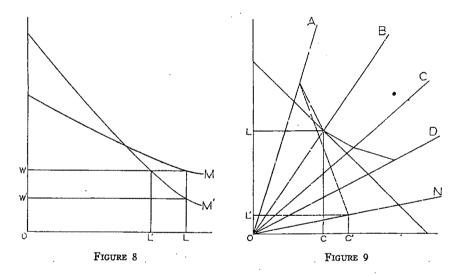
<sup>\*</sup> Automation and Technological Change, op. cit., p. 494.

average quantity of capital used per laborer in the economy, the marginal productivity of labor in other industries will drop (which will be reflected back into this industry). As a consequence, wage rates will drop or unemployment will occur, despite increased employment in this industry.

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If it uses less labor than formerly, it will still use more capital if demand has any appreciable elasticity in terms of wage rate drop, or unemployment, under static assumptions, will be even more drastic.

In terms of the Clark diagram, the effect will show in terms of a negative tilting of the marginal productivity of labor curve. (Positive tilting is used here to designate a relative upward movement of the right end of the curve. Negative tilting designates a relative upward movement of the left end of the curve.) Curve M', in Figure 8, is the new marginal productivity of labor, after the introduction of tech-



niques which are predominantly of the category shown in Figure 7. Curve M shows the situation before the introduction of techniques of this category.

If the quantity of available labor is OL, which falls to the right of the cross-over point of the two curves, then the wage rate must fall from OW to OW' to maintain full employment. If it remains at OW, then LL' workers will be unemployed or will retire from the labor force.

The case cited above of automatic machining of cylinder heads released labor but practically no capital at constant output. In this instance, a negative tilting of the marginal productivity of labor curve results. An even more drastic case producing negative tilting is that of the new automatic method for crankpin grinding. Five hand-operated grinders costing \$201,000 can be replaced with an automatic grinder costing \$280,000. This change is illustrated diagrammatically in Figure 9. Here, the consequence is clearly one of absorbing capital relative to labor in proportions which reduce marginal productivity of labor in the economy (under static assumptions), regardless of whether the industry uses more or less labor after the change.

### Conclusion

Typical instances of automation were analyzed above. These were categorized largely in terms of their effect on the capital-labor ratio in the directly affected industry and in the rest of the economy.

Where automation is an adaptation to the growth in capital and rising marginal productivity of labor, a rise in the capital-labor ratio in the affected industry occurs. When it is capital growth that lies at the root of the phenomenon, the capital-labor ratio in both the affected industry and the rest of the economy is rising and real wage rates and employment grow. When automation is the consequence of rising marginal productivity of labor resulting from technological change in the balance of the economy, the directly affected industry will absorb capital from other industries.

With an automating industry absorbing capital because of the latterly described situation, the capital-labor ratio in the balance of the economy will drop compared to what it otherwise would have been. However, the capital absorbed in the directly affected industry will be less than the capital released elsewhere because of technological change elsewhere (the railway example). Marginal productivity of labor will rise and both wage rates and employment can expand.

Where automation is the consequence of new inventions applicable in the automating industry, it may be both labor saving and capital saving (in the technical coefficient sense). If the ratio of released labor to released capital is small relative to the ratio of labor to capital in the balance of the economy, and the elasticity of demand facing the automating industry is very low, the capital-labor ratio in the balance of the economy will rise. Wage rates and employment will rise. If released labor to released capital has the reverse relationship, wage rates must decline or unemployment will occur. The extent to which wage rates must decline will depend upon the elasticity of substitution of labor for capital in both the balance of the economy and in the automating industry. Any decline in wage rates will react back into the automating industry and moderate the decline of the labor-capital ratio there.

Any decline in wage rates is, of course, the consequence of the nega-

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tive tilting effect of the new inventions on the marginal productivity curve of labor. This, of course, means that the return to the owners of property increases. The negative tilt of the curve brings forces into being which start tilting the curve positively. In other words, the situation carries its own curve.

The higher incomes of property owners will generally lead to increased saving because of increased ability to save. Also, the higher return will motivate increased saving. The additional saving and capital formation will have a positive tilting effect and restore the marginal productivity of labor to its old levels. As it continues, it will raise marginal productivity and wage rates to levels which would have been unattainable before the occurrence of the new inventions.

# THE ECONOMICS OF NUCLEAR POWER

# By RICHARD A. TYBOUT Ohio State University

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By nuclear power, we shall mean electricity produced from the energy of the splitting atomic nucleus. Other applications of this energy are in various stages of development for the propulsion of sea, air, and land craft, while atomic weapons release the same nuclear energy under different conditions. The result is that military programs already have financed the basic research for civil nuclear power, have created uranium refining and other supporting private industries, and have brought into being publicly-owned production capacity that can directly service nuclear power plants. Nuclear power development has been launched from the plateau of a public program with a cumulative total expenditure of 15 to 16 billion dollars, at least several billion dollars of which would have been necessitated by a single-purpose nuclear power effort.

The main problem today is to develop nuclear engineering knowledge for low-cost power generation. This is being done in a joint government-business program which has the added objective of building a maximum private base of nuclear supply industries. The Atomic Energy Commission supports basic and applied engineering research for particular plant problems; supplies nuclear fuel for specified charges; and provides certain fuel reprocessing services at cost. Minor subsidies are involved in the charges for nuclear fuel. Private industry conducts other engineering research and is designing and constructing nuclear power plants and supply plants.

AEC will spend an estimated 500 to 600 million dollars through fiscal year 1958 for its part in the above program but also including most of the costs for the first nuclear power plant to be operated in the United States, the Shippingport plant, located in the Pittsburgh area and scheduled to begin operation in 1957. The rest of the cost of this plant will be borne by the Duquesne Light and Power Company.

Private industry will probably spend 300 million dollars through calendar year 1958, roughly 200 million of which will be for the construction of five nuclear power plants (*ibid.*, page 85 n). These are the

<sup>&</sup>lt;sup>1</sup>The principles governing the determination of fuel charges and service costs (to the extent these have been announced) are discussed in Tybout, "The Public Investment in Atomic Power Development," Law and Contemporary Problems, Winter, 1956. This reference gives other details of the AEC nuclear power program and its costs, as summarized here.

so-called "first round" projects. All five are large plants, i.e., plants on the order of 100,000 kilowatts capacity or greater, and are scheduled for operation by or before 1960. In response to an AEC invitation, seven smaller nuclear power plants have been proposed (the "second round" projects), but plans for these are not sufficiently firm to be sure of operating dates.

The above program seems likely to be expanded at the next session of Congress, but as presently conceived, it is expected to bring nuclear

TABLE 1

Total Power Cost Projections for Large Steam Plants
(Rounding is to nearest tenth of a mill)

Convention	onal Powe	T			
	1960	1965	1970	1975	1980
Capital investment Constant at \$140 per kilowatt capacity Load factor: 50 per cent Equivalent annual fixed charge: 9.00 per cent* Investment cost, mills per kw-hr. Fuel cost, mills per kw-hr. Thermal efficiency, per cent Median delivered fuel price per million BTU, in cents Operation and maintenance, mills per kw-hr	40.0	2.4 41.5 29	2.4 43.0 30	44.5 • 31	2.4 46.0 32
Total, mills per kw-hr	6.1	6.0	6.0	5.9	5.8
Nuclear Pov	ver—Opti	nistic			
-	1960	1965	1970	1975	1980
Capital investment, dollars per kw capacity Load factor: 50 per cent Equivalent annual fixed charge: 9.67 per cent*		193	177	155	145
Investment cost, mills per kw-hr  Net fuel cost, mills per kw-hr  Operation and maintenance, mills per kw-hr	4.4 3.0 1.1	4.2 1.6 1.1	3.9 1.3 1.0	3.4 1.1 0.9	3.2 1.0 0.8
Total, mills per kw-hr	8.5	6.9	6.2	5.4	5.0
Nuclear Pow	er—Pessi	mistic		- 2	
	1960	1965	1970	1975	1980
Capital investment, dollars per kw capacity Load factor: 50 per cent Equivalent annual fixed charge: 9.67 per		227	205	180	165
cent* Investment cost, mills per kw-hr Net fuel cost, mills per kw-hr Operation and maintenance, mills per kw-hr	5.3 3.9 1.1	5.0 2.9 1.1	4.5 2.2 1.0	4.0 1.7 0.9	3.6 1.5 0.8
Total, mills per kw-hr	10.3	9.0	7.7	6.6	5.9

power costs down within a reasonable range of conventional power costs by 1960. Thereafter, nuclear cost reductions are expected to come from operating experience and external economies.

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Nuclear power plants are similar to conventional power plants except that steam is generated in a reactor, where the nuclear energy appears as heat rather than in a conventional furnace burning coal, oil, or gas. After the steam has been delivered to the turbogenerator, electrical generation, transmission, and distribution proceed as before. For this reason, the special costs associated with nuclear power are almost entirely limited to the production plant, the costs of which generally account for slightly less than half of delivered electric power rates in conventional systems.

Available evidence suggests that nuclear heat is best suited for use in large plants. Costs of power from small nuclear plants are not well known, but appear to be three or more times greater than expected of the large.<sup>2</sup> At the other end of the scale, we do not expect nuclear power to become cheap enough to compete with hydroelectric power in the United States. Future discussion will therefore be concerned only with large steam plants, where the prospects for nuclear power are best.

Table 1 shows power cost projections, in 1955 dollars, for best-practice technologies in the two decades from 1960 to 1980. The figures

<sup>2</sup>A cost of 30 mills per kilowatt-hour for small nuclear power plants has been suggested by Dr. W. F. Libby, Commissioner, U. S. Atomic Energy Commission, "Remarks Prepared for Delivery before the Rice Institute Associates, Houston, Texas, November 30, 1955" (mimeographed AEC release). Cf. large plant costs in Table 1, infra.

#### (Continuation of Table 1)

Source: Adapted from Peaceful Uses of Atomic Energy, Vol. 2, Background Material for the Report of the Panel on the Impact of the Peaceful Uses of Atomic Energy to the Joint Committee on Atomic Energy, 84th Congress, 2nd Session (January, 1956), pages 8-30, except for equivalent annual fixed charge, which combined data from the foregoing with data from "Information for Interim Use in Estimating Power Values and Hydroelectric Power Costs," internal memorandum of the Federal Power Commission (February, 1953), pages 6 and 37.

\* Equivalent annual fixed charges were made up as follows. All figures are expressed as percentages of original plant investment.

	Conventional	Nuclear
Lifetime equivalent return on investment, including federal income taxes (5.5 per cent on value of plant, 50 per cent bonds at 3½ per cent, rest of financial structure in preferred and common stocks).  Depreciation, straight line (Conventional, 35 year life; Nuclear, 30 year life).  State and local taxes.  Insurance	4.04% 2.86	4.04% 3.33 1.8 0.5
	9.00%	9.67%

are from a recent survey and, except for slight variations in the method of handling capital charges, probably represent the best consensus available on projected technologies. Nuclear data for 1960, in fact, are drawn from plant costs already made firm in contracts for first round projects. Today's subsidy in nuclear fuel prices is excluded from the Table 1 estimates, and nuclear fuel production itself is assumed to follow best-practice trends. Upper and lower estimates are given for nuclear power to take account of the probable cost range.

Investment costs in Table 1 are lifetime averages per kilowatt-hour generated, but fuel and operating costs apply only for the first year of plant operation. This follows from the fact that the plant itself (we assume) becomes a fixed and unchanging cost expressing the state of technology at the time of installation, but fuel prices and wage rates are subject to changes over the life of the plant. Total costs in Table 1 therefore represent an entrepreneurial calculation in which a long-run judgment is made about fixed costs and a short-run judgment is made about variable costs. This is not the only way we intend to compare power costs, but it suits our purposes as a first approximation.

Load Factor. Table 1 uses a load factor of 50 per cent—roughly the lifetime average for conventional plants. We are not sure that the figure will be this low for nuclear plants because in the mixed conventional and nuclear systems likely to exist in the period covered by Table 1, one would normally expect the nuclear plants to be operated at higher lifetime average load factors because of their lower out-of-pocket costs. On the other hand, we have no alternative but to approximate the lifetime average. If we were to compare nuclear and conventional plants in, say, their first years of operation, the 80 or 85 per cent load factor then obtaining for both would overstate the advantages of nuclear power, due to its higher proportion of fixed costs. To the extent that an error is introduced by using the same lifetime load factor for nuclear and conventional plants, it understates the economic potential of nuclear power in the transitional period of mixed systems.

Annual Fixed Charges. The lifetime approach is also represented in the choice of annual fixed charges. As a generating plant is retired, the physical plant upon which a return is paid decreases to zero value. Instead of applying the same rate of return to a changing physical plant value, our annual fixed charges in Table 1 include an equivalent lifetime return on the original investment.

Other assumptions required for the calculation of the annual fixed charges are indicated in a footnote to the table. The only one of these that warrants special attention is the rate of insurance for nuclear power plants. Our figure of 0.5 of 1 per cent of original plant investment was proposed by the general source for the table. At the time

this figure was proposed, knowledge of insurance costs was sketchy.3 We still do not know the proper insurance cost for nuclear plants, but the total inference of recent testimony on the subject is that it will exceed insurance costs in conventional plants by a much larger factor than our data suggest.4 Indications are that part of the indemnification will be provided at public expense (ibid.), but, of course, this will make no less significant the insurance burden for a social accounting.

Our understated load factor and understated fixed annual charge will have opposite effects upon the projected real fixed costs of nuclear power. We do not have enough information to estimate the probable direction of any net effect and will therefore continue to use the Table 1 estimates, but with reservations.

Net Fuel Cost. The net fuel cost estimates for nuclear power take into account interest on the fuel inventory (at 4 per cent), the costs of manufacturing and fabricating fuel elements, the costs of removing and disposing of waste materials, and allow a credit for the value of fuel recovered from spent elements.

Interest on fuel inventory is a negligible cost in conventional plants, but in nuclear plants, fuel inventories may easily reach a value of 1 to 10 million dollars for 100,000 kilowatts of capacity. Daily burn-up typically accounts for no more than one-thousandth of the fuel that must be kept in the reactor for effective operation.

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The general downward movement of nuclear power cost depends most on economies in the fuel cycle. This can be seen by comparing the differences in fuel cost with the differences in other nuclear cost elements over the twenty-year period covered by Table 1. If we extend the comparison back to 1957, when the Shippingport plant is expected to generate nuclear power for a net fuel cost of 34 mills per kilowatthour, we can appreciate the central importance of fuel cost reductions. Compare 34 mills with the upper and lower limits of 1.5 and 1.0 mills, respectively, shown in Table 1 for the year 1980.

Nuclear Fuel Economies. Reductions in nuclear fuel costs are expected, first, from reduced costs of fuel fabrication. An early AEC es-

pp. 604-616.

See, generally, Hearings before the Joint Committee on Atomic Energy on Governmental Indemnity for Private Licensees and AEC Contractors Against Reactor Hazards (84th Cong., 2nd Ses., May 15, 16, 17, 18, 21 and June 14, 1956). For an AEC estimate of the consequences of a nuclear disaster, see pp. 47-55.

Data submitted by Atomic Energy Commission in Hearings before Joint Committee on Atomic Energy on Proposed Legislation for Accelerating Civilian Reactor Program (S. 2725 and H.P. 19805, 84th Cong., 2nd Ses., May 23, 1956), p. 98.

and H.R. 10805, 84th Cong., 2nd Ses., May 23, 1956), p. 98.

<sup>&</sup>lt;sup>3</sup>Cf. "Insurance of Reactor Operations," Peaceful Uses of Atomic Energy, Vol. 2, Background Material for the Report of the Panel on the Impact of the Peaceful Uses of Atomic Energy to the Joint Committee on Atomic Energy (84th Cong., 2nd Ses., January, 1956),

timate was that if a threefold reduction of total nuclear power cost (as then estimated) were achieved, this would probably require an eightfold reduction in fuel fabrication costs.<sup>6</sup> The cost reduction is expected from economies in machining and metal working as fuel fabrication is set up on a mass production basis.

A second fuel cost reduction depends on the complex technology of regeneration. In the proper circumstances, new nuclear fuel can be produced in a reactor while the old is being consumed. The total process constitutes a regeneration of nuclear fuel.

The active ingredient in nuclear fuel is fissionable material. There is only a limited amount of fissionable material occurring in nature, this being the uranium isotope 235, which constitutes 0.7 of 1 per cent of natural uranium. The plentiful isotope 238 making up the rest of the uranium can, however, be converted to a new element, plutonium 239, capable of fission. And another fissionable isotope of uranium, 233, can be produced from naturally occurring thorium. To produce either of these two new fissionable materials, we put uranium 238 or thorium, respectively, in a nuclear reactor under the proper conditions.

Regeneration of nuclear fuel can reduce the cost of nuclear power in two ways. First, it makes available more of the world's natural resources for conversion to nuclear fuel. This affects mining costs today, but over the centuries it may have considerably greater significance. One very rough estimate suggests that the economically recoverable world resources of uranium and thorium represent a heat content more than twenty-five times those of coal. (See Putnam, *Energy in the Future*, published by Van Nostrand, 1953, pages 210-214.) Second, regeneration achieves economies in fuel manufacture by combining parts of the fuel production and utilization processes. The regenerated fuel has by-product status and appears as a credit against the costs of the fuel consumed.

A final source of cost reduction in the fuel cycle is expected from the improvement of fuel reprocessing techniques. As nuclear fuel is burned, it produces fission fragments, whose presence, unfortunately, quenches the nuclear reaction. The fuel must be removed and chemically reprocessed to get rid of the fission fragments, or nuclear waste materials. We have seen that government plants are now available for the reprocessing service at cost. With the growth of the nuclear power industry, private central reprocessing facilities are expected to do the job. To achieve economies of size, the central reprocessing units will have to draw spent fuel elements from a large number of nuclear power stations, but this is not the source of expected cost reduction. Government plants are already engaged in large-scale reprocessing. The major

<sup>&</sup>lt;sup>6</sup> See Tybout, *supra* note 1, p. 83 n. Numerical estimates of the importance attached by AEC to other sources of cost reduction are also given

cost reduction will come from reprocessing that is especially tailored for the kinds of fuel used in nuclear plants. Since present plans call for a variety of nuclear plants with a variety of kinds of fuels, economies from this source will depend upon the existence of quite a large number of nuclear plants and will come late in the growth of the nuclear power industry.

Nuclear Plant Economies. Reductions in investment cost make up the next most important cause of reductions in the total cost of nuclear power shown in Table 1. Let us again refer back to the Shippingport plant in 1957 (supra, note 5). Calculating investment costs as in Table 1, we get 16.6 mills per kilowatt-hour. This compares with our upper and lower limits of 3.6 and 3.2 mills, respectively, for investment costs in 1980.

Nuclear plant cost reductions cannot be pin pointed to particular changes in nuclear plant technology, but they include, to an important degree, improvements in construction techniques and external economies in the production of heretofore rare metals and alloys capable of withstanding the combination of heat and high radioactivity inside and around nuclear reactors.

Conventional Power Cost Trends. Conventional power costs will be subject to countervailing influences. Increased steam pressures will lead to higher boiler costs, but lower turbogenerator costs, leaving the plant investment unchanged at today's best-practice level of \$140 per kilowatt of capacity. Increased steam temperatures will lead to greater thermal efficiency but will be offset by increased fuel prices, leaving an identical net fuel bill per kilowatt-hour. Only in operation and maintenance is there an expectation of real cost reduction.

#### IV

To this point, we have compared trends in nuclear and conventional power costs using a median price for conventional fuels. It is well known, however, that conventional fuel prices vary from one part of the country to another, principally as a result of transportation costs. To take an extreme example, natural gas in Texas costs about 1.0 mill per kilowatt-hour, while coal in Massachusetts may cost as much as 4.0 mills per kilowatt-hour in an identical power plant.

The same is not true of nuclear fuel. Because it is almost weightless and sizeless for its energy content, nuclear fuel prices will be practically unaffected by transportation costs. There are regions in the United States where the cost advantage will probably go to nuclear power in the sixties and other regions where it will stay with conventional power throughout the time span covered by Table 1. The general result for the location of industry will be to reduce or eliminate geographic differences in steam power (but not hydropower) costs for

those consuming centers able to support large-scale nuclear plants.<sup>7</sup>

Using approximate trends for conventional fuel prices in each of the eight Federal Power Commission regions, a forecast of the total growth of nuclear power capacity has been made by the group responsible for our Table 1 predictions.8 The results are shown in Table 2 as percentages of large plant capacity additions expected to be nuclear in selected years. From these percentages, different absolute capacities can be calculated, depending upon which of several projections of total national electric power demand one wishes to use.9

Columns 1 and 2 of Table 2 were derived from comparisons of total costs calculated as in our Table 1 and using the same data where applicable, except that a slightly higher (10.88 per cent) equivalent

TABLE 2 Proportion Nuclear of Large Steam Plant Capacity Added in Selected Years

	(1)	(2)	(3)
	Proportion Nuclear,	by Cost Comparison	Most Probable
	Optimistic	Pessimistic	Proportion Nuclear
1960	0%	0%	4%
1965	1	0	7
1970	32	0	14
1975	73	1	45°
1980	89	38	65

Source: Peaceful Uses of Atomic Energy, Vol. 2, Background Material for the Report of the Panel on the Impact of the Peaceful Uses of Atomic Energy to the Joint Committee on Atomic Energy, 84th Congress, 2nd Session (January, 1956), page 23.

annual investment charge was used for both nuclear and conventional power. Whenever the total cost comparison favored nuclear power, this was installed; whenever conventional power, this was the choice. An equal total cost led to a 50-50 split between nuclear and conventional capacity. The importance of each region was weighted in accordance with Federal Power Commission predictions of regional additions to electric power capacity.10

The column 1 and 2 forecasts both show sharp upswings in nuclear capacity because there are substantial power markets in which conventional fuels vary but little in price. For the same reason, we observe approximately a ten-year difference between the optimistic and pessimistic appearances of nuclear capacity. Any adjustments of the cost

(United Nations, 1956), p. 400.

<sup>10</sup> Estimated Future Power Requirements of the United States by Regions, 1954-80 (Publication FPC P-29, October, 1955).

<sup>&</sup>lt;sup>7</sup> The point has been elaborated in two pioneering works: Schurr and Marschak, Economic Aspects of Atomic Power (Princeton, 1950); and Isard and Whitney, Atomic Power (Blakiston, 1952).

For other forecasts of nuclear power capacity, see Tybout, supra note 1, pp. 71-73. For a bibliography of projections of national electric power demand and some discussion of the problems of estimating (for the purpose of excluding) small steam and hydro-electric capacity, see Karl M. Mayer, "The Economic Potential of Nuclear Energy," Pro-ceedings of the International Conference on the Peaceful Uses of Atomic Energy, Vol. 1

estimates in Table 1 would cause equally amplified effects in Table 2. We recall that, apart from the accuracy of the technological predictions, there are uncertainties arising from the economic assumptions on which the investment costs are based, and even more fundamentally we cannot be sure that in planning future power capacity, the utility executive will base his conclusions upon a combination of lifetime fixed costs and strictly contemporary variable costs. Any allowance for expected fuel price and wage rate trends over plant life will change our results in both Tables 1 and 2.

Let us assume that over the period of time with which we are here concerned, wage-rate trends will be the same throughout the electric power industry, whether for nuclear or conventional plants. The total impact of any advance allowance for future trends is then focused upon fuel prices, and these in turn give the advantage to nuclear power. The trend of conventional fuel prices is gently upward. We have not listed separate figures for nuclear fuel prices and credits, but the importance of cost reductions in nuclear fuel fabrication and reprocessing is clear. Advance planning for future price declines may cause our Tables 1 and 2 to significantly understate the future of nuclear power.

Column 3 of Table 2 was intended by our source to strike a reasonable compromise between the optimistic and pessimistic forecasts, while at the same time taking account of (1) the probably slower rate of growth of the industry due to lags in adoption of best-practice techniques, in training personnel, and similar frictions in supply industries; and (2) the fact that nuclear capacity is already in existence and is expected to grow notwithstanding early cost disadvantages.

We can hardly judge the particular compromise or the importance of frictions, though both have a place in the analysis. A more interesting question is: Why might so much nuclear capacity be installed when it will result in costs above those of alternative conventional facilities? Part of the answer lies in the fact that Tables 1 and 2 do not take account of AEC's temporary subsidy. Another part may be found in previous discussion of allowance for future price declines in nuclear fuel. But these are not adequate explanations of the magnitude or early stage of installation of nuclear power. Perhaps more important (and recognized by our source) is the incentive to gain know-how in a new technology promising ultimate economic advantages. One would charge off the losses against the value of the know-how. There is evidence that just such an approach is being taken by designers of nuclear reactors and equipment, but this does not take care of our present problem, for the contract prices entered into by supply firms were used as a starting point for the 1960 nuclear cost figures appearing in Table 1. To explain the installation of high-cost nuclear capacity, we must turn to the electric power industry itself.

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been heard before state public utility commissions. 11 Both follow the same pattern and seem to establish a precedent that permits higher nuclear costs to be fully reimbursed through higher electric power rates. This is accomplished by charging part of the cost of nuclear power to research, which is a recoverable operating expense in the FPC Uniform System of Accounts, adopted by most state commissions. If the precedent is followed—and there is no reason to think that it will not be the electric power consumer will be the one to pay (involuntarily) for the know-how, the patent rights and any other advantages acquired by electric utilities during the precompetitive period of nuclear power.

Two observations are in order. First, the operation of a full-scale electric power station at a cost above that of alternative methods in order to advance technology is something of an extension of the research concept. Second, we have seen that a large part of the cost reduction of nuclear power is expected to come from external economies specific to different supply industries. If there is any justification for the FPC practice of charging research to reimbursible expenses, it does not appear here.

It is interesting to note that AEC conceives the public interest somewhat differently. We have seen that AEC is sponsoring most of the industrial research for nuclear power. This is a public investment in technological knowledge. Instead of the results becoming the property of a particular private firm, the general AEC policy is to file for patents which then become available to all on a nonexclusive royalty-free basis. This is supplemented by programs for the dissemination of technological information.

AEC experience will provide an interesting case study in the public support of invention, A small number of large firms have long held sway as AEC contractors in the areas of nuclear equipment and services that will become profitable with the success of nuclear power. 12 Secrecy requirements have worked to their advantage in years past, though secrecy is not an important obstruction today. We have yet to see whether the Commission's efforts to disseminate information will adequately offset the edge that has gone to insiders. If so, AEC will have established the efficacy (and the technique) of public support of industrial research beyond any reasonable doubt. If not, we run the risk that as nuclear technologies are taken over by the private sector, their development will be conditioned by industrial concentration.

<sup>&</sup>lt;sup>11</sup> For details of these cases, see Tybout, supra note 1, pp. 75-84.
<sup>12</sup> For a discussion of the causes of industrial concentration among prime atomic energy contractors, see Tybout, Government Contracting in Atomic Energy (University of Michigan Press, 1956).

# DISTRIBUTION OF GAINS FROM RISING TECHNICAL EFFICIENCY IN PROGRESSING ECONOMIES

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Continuously rising efficiency of production has come to be one of the characteristic dynamic concepts of twentieth-century economics, as well as one of the outstanding phenomena in many parts of the world. Increasing physical output per worker is of course an essential condition for rising real standards of living in any nation (apart from outside help, which can only be temporary). How that increasing product is to be shared is the source of prolonged and recurring disputes. Yet little attention has been given in economic discussions to how this gain has actually been shared, what factors influence its sharing, or what should be the normative values considered in settling the conflicts involved. This paper presents a preliminary reconnaissance of this broad field, examines a few samples of the manifold phenomena involved, and suggests lines for more extensive and detailed investigations of the facts and issues.

The basic concept of efficiency of production is subject to different interpretations under different conditions. This paper will be confined largely to changes in highly industrialized countries, as illustrated by the U.S. where data are most adequate.

The over-all facts as to increase in productivity in the U.S. are well known. In agriculture, the physical volume of output per man-hour has risen practically continuously, relatively slowly until about 1934, and since then much faster at a rate of about 4½ per cent per year.¹ The increased output per hour was due both to more productive technological methods and to a continuing substitution of machines for man-power. In manufacturing as a whole, there was a continuing gain in physical volume of output per man-hour employed, faster than in agriculture up to 1934, but thereafter only about 2 per cent per year. Railways, mines, and electricity also show substantial rates of gain in labor productivity. In nonfarm industries as well as on farms, improvement of methods and increased capital per man both contributed to the rising productivity.

Production of physical things makes only part of economic production, and represents the part where machinery may most readily be

<sup>&</sup>lt;sup>1</sup> Specific references will not be given for statements based on regular statistical compilations of the U.S. Dept. of Agriculture and U.S. Bureau of Labor Statistics. References are to most recent series, as far as available.

substituted for manpower. Over the economy as a whole, gain in average output per worker is slower. Total physical production in all forms, and real national income, per capita for all persons gainfully employed in civilian activities, both rose by 1.7 per cent per year from 1929 to 1950. This rate of increase in over-all national output per capita is, as expected, substantially below the rates for workers in agriculture and manufacturing industries engaged solely in physical production.<sup>2</sup>

These data are in part approximations, obtained by dividing indexes of output by indexes of manpower or employment. Much more detailed and accurate data on net changes in productivity in individual industries, after allowing for changes in input, are available from careful studies made by the Bureau of Labor Statistics and other bodies.<sup>5</sup> These will be considered later in this paper.

# Distribution of Gains from Productivity

Traditional economic theory assumes that reductions in labor costs due to progress in the arts are promptly passed on to consumers as reductions in prices for the products concerned. General progress in labor productivity would thus lead to a general reduction in price levels and costs of living, distributing the resulting gains in buying power uniformly to all income receivers. Obviously this is a very unsatisfactory model for a world where monopolistic competition, labor unions, and government interventions all tend to modify the process. A slightly more realistic model would be for the gains to be distributed in part by a decline in prices, proportional to the gain in efficiency in each product. and in part by a rise in average wages. If reflected solely in lower prices, general price level would fall; if partly in lower and partly in higher prices, price level might hold substantially steady. It could even be passed on by rapid rises in prices of those products and services with no gain in efficiency and less rapid rise in those with moderate gains; no increases in those with the greatest rates of gain; and a general increase in incomes in all groups to give increased over-all buying power despite the over-all rise in prices and living costs. This would, of course, reduce buying power of those dependent on pensions and other fixed incomes. In any case, if the gains were to be shared generally among the whole society, real prices should fall most for products and services with rapidly rising efficiency and rise for those with little or no technological improvement, while real incomes of workers and investors would tend to increase generally among all industries and occupations. The actual behavior of productivity, wages, prices, and profits may now be examined

<sup>&</sup>lt;sup>2</sup> Data from Midyear Economic Report of the President (July, 1951). <sup>8</sup> Productivity and Unit Labor Cost in Selected Manufacturing Industries, 1919-40 (Bureau of Labor Statistics, February, 1942), and later reports.

for indications of how far their behavior differs from that which would be expected from this simplified model.

If output per man-hour rises in a given industry—steel, for example—the gains from that increased output may be distributed in a variety of ways, including the following: (1) to workers in the industry, in increased leisure through reduced normal hours per week; (2) to workers in the industry in increased real income per week; (3) in changing payments for inputs of goods and services obtained from other industries; (4) in increased payments to owners of capital in the industry concerned; (5) to workers in other industries and occupations, through reduced real prices for the products of the industry concerned.

The last classification is very important. Some occupations—school teachers, government officials, barbers, doctors, for example—can make only limited use of mechanization or of mass production to improve their output per hour, as opposed to the great mass-production industries such as steel, automobiles, electric power, agriculture, etc. If workers in the first group are to share in the increased product resulting from improvements in efficiency in the other industries, it must be through part of the gains in efficiency in the progressing industries being reflected in reductions in the real price of their products, or else through the payments or charges for the services of less favored industries increasing relative to prices of mass-produced products.

We may try to see what these five lines of distribution of gains mean by examining what has happened in some industries or industry groups.

Steel. In steel, physical productivity per hour not only trends upward with time but tends to vary from year to year with the per cent of capacity operated.4 By comparing years of approximately peak-capacity operation, we can hold the per cent of capacity effect reasonably constant. We will therefore take 1913, 1920, 1923, 1929, 1940, 1950, and 1955 as years to compare. The data published by the U.S. Steel Corporation for its own operations will be used, plus BLS price indexes. The resulting derived data are given in Table 1. Labor productivity as shown in the table is based upon tons of steel ingots and castings produced per man employed. The average selling price of U.S. Steel sales per ton of steel has in fact advanced substantially faster than the price indexes of iron and steel products. This indicates that the composition of the products sold has changed toward steadily higher degrees of fabrication and of more expensive alloys and that the increase in real physical productivity must therefore have been somewhat higher than that indicated on the tonnage basis alone.

<sup>&</sup>lt;sup>4</sup> Kathryin H. Wylie and Mordecai Ezekiel, "The Cost Curve for Steel Production," Journal of Political Economy, December, 1940, pp. 777-821.

Over the long period, productivity per hour has trended steadily upward, almost tripling in the forty-two years. This was a true gain in net productivity, since purchases of other goods and services in per cent of sales showed no significant trend. Almost half the increased productivity per hour went into greater leisure, to reduce the normal steel working week from the equivalent of almost ten hours a day, seven days a week, to an average of seven and a half hours for a five-day week. This reduction in the working week was completed by 1940. Beyond the increased leisure, real wages per week varied generally around the same level from 1913 to 1929 (although declining in the twenties) and then advanced gradually to 1950 and more sharply subsequently, exceeding the rise in output per week. None of the

TABLE 1
PRODUCTIVITY IN STEEL, AND ITS DISTRIBUTION

PRODUCTIVITY		:	Real Wages			Iron and Steel	Purchases	PROFITS		
Year	Per Hour (1920	Per Worker	Per Hour (1920	Per Week	Dollars per Week (1947-49 =100)	Hours Per Week	Price Deflated (1920 =100)	of Prod- ucts and Services in Per Cent of Sales	Per Cent of Sales	Per Cent of Net Worth*
1913 1920 1923 1929 1940 1950 1955	87 100 101 154 185 213 255	101 100 100 119 111 134 160	73 100 98 115 184 218 296	85 100 98 89 114 139 187	41 49 47 43 55 67 90	68.9 59.4 59.3 46.2 36.7 37.8 37.5	86 100 103 86 106 92 106	34 34 32 32 32 33 38 38	14.5 8.5 9.9 18.0 9.5 7.3 7.8	11.2 8.5 15.3 15.2

Sources: Computed from data in Annual Report, 1955 (U. S. Steel Corporation), pages 30-31; BLS indexes of cost of living, wholesale prices, and iron and steel prices.

\* Figures for leading iron and steel corporations, from First National City Bank of New York Monthly Letter.

increased productivity went to steel purchasers, real prices of iron and steel fluctuating within a moderate range and generally trending slightly upward. Profits after taxes, measured in per cent of sales, also showed no significant trend and if anything averaged lower since 1929 than before, but profits per dollar of net worth trended up since 1929. How far real capital employed per worker or per ton increased or decreased cannot be estimated, in the absence of any effective method of deflating the reported values of plant and equipment at cost and of taking into

The increase in output per man-hour estimated from U.S. Steel data from 1920 to 1940, 85 per cent compares with an increase of 105 per cent calculated by the Bureau of Labor Statistics for the entire iron and steel industry (loc. cit., p. 24). For output per worker, the change was 11 per cent for U.S. Steel, but 26 per cent for the whole industry. U.S. Steel apparently reduced hours per week more than did the industry as a whole. If U.S. Steel production is estimated by deflating the value of sales by the new BLS price index of finished steel mill products (available only since 1939), the increase in productivity per man, 1940-55, is materially greater (61 per cent instead of 45) than when based on tonnage, with the increase larger from 1940 to 1950, but lower from 1950 to 1955. The operation of Federal Ship and Dry Dock Co. by the Corporation, prior to 1948, made the 1940 productivity figure especially doubtful.

account varying depreciation charges. It does seem, however, that real capital per worker must have increased substantially.

Steel, as far as U.S. Steel Corporation data indicate, thus appears to be a case where the workers in the industry have retained in more leisure plus increasing buying power substantially all, or possibly even more than all, their own rapid increase in productivity, where owners of capital received some increase in return on capital invested, so far as indicated by net book assets, but where consumers of steel have received none of the gains.

Other Manufacturing Industries. It is not possible in this brief paper to present similar separate analyses for other individual industries. Some general data are available, however, especially from a notable series of studies by Ross, Lester, Goldner, and Garbarino, published from 1948 to 1950.6 While the final results were somewhat conflicting, all three major studies found some influence of the extent of unionization on the movement of wages but indicated that oligopolistic market structure and productivity also had some effect. The results varied with the exact periods compared.

A reconnaissance, over-all analysis can be made for thirty-four manufacturing industries, using a table from Garbarino for 1940 compared to 1923 and covering per cent changes in output per man-hour and in hourly earnings and concentration in the industry as an indicator of extent of oligopoly. The per cent changes in wholesale prices of the products of each industry over the same period and the degree of unionization at the end of the period have been added.7 The resultant data are shown in Appendix Table 1, tabulated in order of descending change in productivity. A positive relation between productivity and change in earnings and a negative relation between productivity and wholesale prices are quite marked. In general, a high degree of oligopoly as indicated by degree of concentration (per cent of output produced by the four largest firms) and, to a lesser extent, a high degree of unionization, were most prevalent among industries showing high productivity.

Dividing the data into four groups according to productivity change and taking simple averages of the relatives for prices and wages in each group, results are obtained as shown in Table 2.

Arthur M. Ross, "The Influence of Unionism upon Earnings," February, 1948, pp. 263-286, Richard A. Lester, "Comment," Arthur M. Ross, "Reply," November, 1948, pp. 763-782, Arthur M. Ross and William Goldner, "The Interindustry Wage Structure," May, 1950, pp. 254-281, Joseph W. Garbarino, "A Theory of Interindustry Wage Structure Valuation," May, 1950, pp. 282-305, Quarterly Journal of Economics.

'Where the industry depends on relatively expensive raw materials, with only slight additional processing, as for meat packing and sugar refining, the ratio of prices of finished products to raw materials have been used instead of the latter prices. In many other industries more careful, adjustment is needed to eliminate the effect of price changes in

industries more careful adjustment is needed to eliminate the effect of price changes in

raw materials.

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TABLE 2

RELATION BETWEEN CHANGES IN PRODUCTIVITY AND IN PRICES AND EARNINGS, ACCORDING TO PRODUCTIVITY GROUPS: 1940 IN PER CENT OF 1923 (Simple averages of relatives, unweighted)

Productivity Group	Number of In- dustries	Average Productiv- ity per Man-hour	Average Wholesale Prices	Average Earnings Per Hour	Average Concen- tration Ratio‡
204 to 486	10	Per 286 173 151	cent of 1923 66* 84* 83	141 124 121	51% 29 26
112 to 137		126	86†	113	27 27
Total`	34	188	80.5	126	34

<sup>\*</sup> Based on seven reports only-others not available.

The averages show a general but not uniform tendency for prices to be lower as productivity gains averaged higher and a marked tendency for hourly wages to increase with productivity. A separate analysis within each productivity group reveals a slight but definite tendency for wages to rise more with greater oligopoly, little relation of prices to oligopoly, and no consistent relation of either wages or prices to degree of unionization. More careful analysis, including an adjustment of product prices for raw material price changes, might help clarify these relations.

Earnings per hour rose by an average of 25 per cent in the thirty-four industries considered over a period when general wholesale prices and prices of industrial and farm products and cost of living all fell about one-fifth. With an average gain of 88 per cent in output per hour, real wages per hour advanced an average of just over 55 per cent. From these comparisons, based on changes from 1923 to 1940, it appears that a substantial part of the greater productivity per hour was reflected in higher real wages per hour. Part was distributed in higher increase in incomes in individual industries, in rough proportion to the increase in productivity in each industry; and part was distributed in lower prices generally, especially in the industries with the greatest technical progress. For each increase of 10 index points in output per man-hour in the industry, wages per hour tended to advance by just over 11/2 index points and prices of its products to decline by just under the same amount. Changes in hours of work and in profits have not been considered here for lack of data.

The period just considered, however, blankets together two unlike epochs: the twenties and the New Deal reforms after 1933. Other evi-

<sup>†</sup> Based on four reports only—others not available.
‡ Data represent per cent of total industry output produced by the four largest concerns.

dence has shown that from 1920 to 1929, the gain in real national income was accompanied by large increases in profits but not by increases in real income of workers, and that this may have contributed to the subsequent Great Depression.<sup>8</sup> Re-examination of the changes separately for 1920 or 1923 to 1929 and for 1929 to 1940 and inclusion of real wages per week and of profits in the examination might reveal how the social distribution of productivity gains behaved during the 1929 boom and collapse and how it was affected by subsequent reforms of the Roosevelt administrations.

Manufacturing Industries, 1940-55. Official data on productivity changes since 1940 are available for relatively few individual industries, with many important ones missing. Comparing over-all indexes of production with employment, however, certain rough computations can be made. These are shown for durable and nondurable manufacturing as a whole, in Table 3. If time and space permitted, the same comparisons might be extended to various key industries or industrial groups.

Gross output per worker continued to expand during the period at about the same rate per year in durable and nondurable manufacturing. Over-all, none went into increased leisure; in fact, weekly hours increased slightly after 1940, a year of continuing substantial underemployment. The index of real prices of all manufactured products, excluding farm products and foodstuffs, was substantially unchanged in 1950 from 1940. From 1947 to 1955, there was a sharp increase in real prices of durables; so none of the rising productivity there was passed on as reduced prices to consumers. Real prices of nondurables showed a slight decline—4 per cent—from 1947 to 1955, but that may have been due to declines in prices of farm products and other raw materials and to the rise in durable goods prices rather than to reduced manufacturing margins. Real wages per week rose rapidly, both in durable and nondurable manufacturing, by more than the gain in productivity. Profits after taxes, in proportion to book assets, soared sharply from 1940 to 1950, and dropped slightly in 1955.

Apparently manufacturing of durable products, as a whole, contributed to the general inflation in the fifteen-year period since 1940 by raising real earnings in that group as fast as over-all output per man increased, doubling profit rates, compared to 1940, and also increasing costs of the products to consumers. Nondurable manufacturing, on the

<sup>&</sup>lt;sup>8</sup> This shows up in the steel data in Table 1, with an increase of productivity per week of 19 per cent from 1920 to 1929, but a decline of 11 per cent in real wages per week over the same period.

<sup>&</sup>lt;sup>5</sup> For the few manufacturing and nonmanufacturing industries for which data comparable to Table 3 are available for 1940 and 1950, the averages show a substantial negative correlation between change in productivity and change in price but also some negative correlation between productivity change and real earnings per week.

TABLE 3

Changes in Apparent Productivity, Hours per Week, Real Wages per Week, Wholesale Prices, and Profits, for Durable and Nondurable Manufactures: 1940–55

	Output per Man (1940= 100)	Hours per Week	Real Prices of Products*	Real Gross Wages per Week (1955 dollars)	Average Profits After Taxes (Per Cent of Book Assets)
,		1	Index— 1947–49 =100		
Durable manufacturing1940	100	39.3	n.a.	54	8.5
. 1947 1950	123	41.2	96 105	71	18.7
1955	138	40.2	116	77	16.8
Nondurable manufacturing . 1940 1947	100	37.0	n.a. 100	43	11.3
1947	127	39.7	98	61	15.7
1955	142	39.8	96	68	13.5
		Deletive	 s, with 195	 0 → 100	
Durables1940	81			76	l –
1947	<b>」</b> →.		91		<del>-</del>
1950 1955	100 112	-	100 110	100 108	_
1933	112	<b>-</b> .	110	100	
Nondurables1940	79			71	<u> </u>
1947	100		103	100	<u></u>
1950 1955	100 112	_	100 99	100 110	
1700	''"		1 2	*10	1

Sources: Data tabulated in Economic Report of the President (January, 1956); and for profits, Monthly Letters, First National City Bank of New York.

\* Data are prices of finished goods for producers and for consumers, respectively, deflated by wholesale prices of all goods.

n.a. Not available.

contrary, while similarly raising wages to workers, made lower increases in profits, and no increase in costs to consumers.

Agriculture. Physical output per man-hour increased on farms over the period 1913-55 as a whole at almost exactly the same rate as in steel, but more of the increase came after 1929 (see Table 4). Hours actually worked per week showed relatively little change over the period and actually seemed to have a slight upward trend for a time—due possibly to more effective utilization of time round the year as farms were organized more efficiently. Standard hours of full-time daily work continued long, though, declining only from 10.8 hours in 1940 to 9.8 by 1955. Farmers thus took little of the gain in productivity in increased leisure. With rising use of fertilizers, power machinery, and purchased fuels, purchases of nonfarm production goods increased

TABLE 4	
PRODUCTIVITY IN AGRICULTURE AND	ITS DISTRIBUTION

l	PRODUCTIVITY		REAL EARNINGS PER WEEK*		Amaraga		Pur- chased		
Year	Per Hour	Per Worker	(Index: 1947-49)		Average Hours Worked	Normal Working	Input in Per Cent	Farm Prices	
			Number	Dollars	(Esti- mated) Day (Hours)		of Out- put Value†	De- flated‡	
1913	88	85	118	15.9 ′	32		21	83	
1920	100	100	100	13.5	34		21	78	
1925	100	105	121	16.3	35		21	87	
1929	108	112	128	17.2	35		22	89	
1935	118	108	115	15.6	36		21	79	
1940	138	146	135	18.3	36	10.8	27	73	
1950	224	206	230	31.0	31	10.2	25	92	
1955	264	252	210	28.3	34	9.8	31	81	

Sources: USDA Yearbooks and Statistics, plus "Changes in Farm Production and Efficiency," Agricultural Research Service, USDA, June, 1955, and "Farm Income Situation," Agricultural Marketing Service, USDA, October, 1955.

\* Deflated by index of farm living cost (1920=100 dollars).

† Includes expenditures for fertilizer, pesticides, equipment, etc., but not farm-produced

‡ Deflated by wholesale prices, all commodities (1947-49=100).

relative to gross income, rising from 21 per cent of value of product in 1913 to 31 per cent in 1955. Capital investment per worker also increased rapidly over the period, due both to more acres per man and more equipment per acre. The gain in output per man was thus partially achieved at the cost of increased real inputs, and the net gain in productivity was hence not as marked as in steel. Real weekly incomes to farm workers (farmers and their family members and hired laborers, all combined) showed a percentage increase from 1913 to 1955 only two-thirds as large as that in steel. Despite the large relative increase, the actual real income per week in agriculture (including the return on the capital invested) remained low compared to industrial earnings, attaining only \$28 in 1955 (in 1947-49 dollars) as compared to \$90 in steel. The increase in real earnings per week from 1913 to 1955 was only \$12 in agriculture, as compared to \$49 in steel. The farmers' real share in the country's rising productivity thus remained quite modest. In steel, the fastest and largest increase in real incomes per week came after 1950 with an advance of one-third, whereas on farms real income per week declined about 10 per cent from 1950 to 1955.

Selling prices of farm products, adjusted to constant dollars, advanced slightly from 1913 to 1929 and subsequently varied around that level, reaching a high shortly after the war and since declining one-fifth. From 1913 to 1929, none of the increased farm efficiency was passed on

products, such as feedstuffs and seeds.

to consumers—in fact, during that period, most of that went into increased real incomes to farmers. Thereafter, and especially with the continued rapid advance in technology since World War II, consumers shared substantially in the results of increased farm efficiency, with real prices of farm products in 1955, 10 per cent below the 1929 level, despite all the governmental farm support measures.

As a whole, increased efficiency in agriculture went only slightly into more leisure, substantially into increased real incomes of farmers and farm workers, which still remained low compared to other industries, and, since the twenties, partly into reduced real prices to consumers.<sup>10</sup>

Other Industries and Occupations. Other occupations in general offer less opportunity for increase in output per worker. How far have they gained in real income from the increased productivity in agriculture and manufacturing?

Changes in hours per week may be ignored, as the forty-hour week, or slightly less, has now become standard in almost all occupations, and changes since 1935 in weekly hours worked have reflected changes in business activity. (Note Appendix Table 2.)

In bituminous coal mining, real weekly wages in 1929 were substantially below the over-all national average. They advanced sharply after 1940 and in 1950 and 1955 exceeded both durable manufacturing and the national average. Wages of construction workers paralleled the national average in 1940 and 1950, but sharply exceeded it in 1955, about equaling those of bituminous miners.

Wages in wholesale and retail trade show divergent tendencies, those in wholesale trade roughly equaling those in durable manufacturing from 1940 to 1955, and lagging somewhat behind the over-all national average; earnings in retail trade lagged far behind, both in amounts and in rate of increase; while workers in laundries fell even further behind. Earnings in railways advanced somewhat more, and in telephones, somewhat less.<sup>12</sup>

White-collar workers in federal government also failed to maintain their 1929 position of equaling the national per capita average of real

<sup>&</sup>lt;sup>10</sup> For a more detailed review of shifts in farm and nonfarm income, see John D. Black, "Agriculture in the Nation's Economy," American Economic Review, March, 1956, pp. 1-

<sup>43.

11</sup> The calculated national average income per person gainfully employed slightly overstates the true figure, as it also indicates income received by pension recipients, annuitants, and others not gainfully employed. In the absence of any adequate figure on the total number of income recipients, gainfully employed and otherwise, the average shown must be taken as an upper limit. The figure on average disposable income per person gainfully employed, after deducting taxes paid, may serve as a lower limit for the true average income per income recipient.

<sup>&</sup>lt;sup>12</sup> All real wage comparisons here deal with gross wages, without adjustment for the effects of overtime or allowances for social security contributions, benefits, or other non-current additions. With these added, the long-time gains in real wages of factory workers would be even larger than shown here, on the average.

incomes. School teachers and other employees in state and local government, who averaged well below the national average in 1929, fared little or no better in 1950 or 1955.

Professional workers, self-employed, did better, especially doctors. Doctors more than maintained their position of incomes averaging around three times the national average from 1929 to 1950, while dentists and lawyers fared less well, dropping from 2.5 times the national average in 1929 to twice for dentists and 2.3 times for lawyers by 1950. (Doctors' earnings, of course, are after a preparatory period far longer than for almost any other occupation.)

In comparison with these miscellaneous occupations, farmers' real incomes (including returns on capital) continued relatively low, at just a little over a third of the national average, except in the boom period of 1950, when they reached almost a half.

## Possibilities for Further Study

This preliminary reconnaissance has many shortcomings: (1) Not all relevant factors have been considered. (2) The methods of analysis used are very elementary. (3) The study has been limited to data for the U.S. (4) The analysis for the U.S. itself considered only a small part of the evidence available.

# General Summary

Despite these imperfections—which further research could correct—some attempt to pull together what is suggested by the data considered may be of interest.

U.S. data on productivity since 1940 are so scanty that it has not been possible to obtain very firm conclusions as to the relations between recent productivity changes by industries and the distribution of its gains to workers, business, and general consumers. The more adequate data for the earlier years, 1923 to 1940, indicate that a substantial part of the increase in productivity in that period was distributed generally in lower prices, shorter hours of work, and rising real wages, but with a proportionally more rapid improvement in real wages and reduction in real prices in the industries with the highest real productivity. No marked influence of unionization or of oligopoly on the process was evident. Since 1940—and especially since 1950—real wages per capita have advanced much more rapidly than over-all national output in the steel industry—one industry characterized by both heavy unionization and oligopoly-and also in other industries of heavy unionization but low oligopoly, such as bituminous coal and building construction. Proverbial low-wage industries, such as retail trade, telephones, and laundries, while increasing their real incomes, have lagged relative to the

national average, and so have white-collar employees in state and local governments. Farmers and farm workers have also lagged slightly behind their previous low share of the national average, except in the boom period immediately after the war. Professional men, however, have generally managed to maintain most or all of their relatively favorable position, and so, apparently, have other high-income receivers as a whole. Meantime, since 1940 real prices have increased in durable goods as a whole; so that rather than passing any of their gain in productivity on to consumers, higher wages and higher profit rates there have been attained at the cost of workers in other lines of employment.

There is a natural suspicion that industries which are both strongly oligopolistic and heavily unionized may be in a position to take a lion's share of increasing productivity for themselves, both in pay to workers and in profits to equity owners, at the expense of the real incomes enjoyed by workers in less favored industries, in less protected mercantile and white-collar employment, and in the low-income industry of agriculture. The data examined here suggest that there has been an increasing tendency this way since 1940, and especially since 1950.<sup>13</sup> Much more collection of missing evidence and careful and detailed analysis industry by industry will be needed, however, before this suspicion can be either confirmed or dispelled.

It is easy to say that a process is unfair by which some occupational groups continually receive a larger and larger share per capita of the expanding national product while other continually receive a smaller and smaller share. But it would be much more difficult to reach agreement on what would be fair. Certainly the services of teachers, policemen, nurses, dressmakers, textile factory operatives, and farmers are just as essential to human well-being and standards of living as are those of operatives in steel mills or auto factories or workers in coal mines or building construction. A better system might be one in which each kind of employment would return about the same real income. for a worker of the same ability and industry, with the same investment in education and training, and with the same degree of responsibility; where the whole set of real wages and incomes tended in general to move up in step with the increasing average output of goods and services per worker for society as a whole, and where the value of money remained relatively constant with no marked upward or downward trend. In such a system occupational shifts between industries might need to be brought about by other arrangements than the push or pull

<sup>&</sup>lt;sup>23</sup> Galbraith's "countervailing power," instead of reducing the effectiveness of "original power," may apparently join it to exploit the rest of the society. See John K. Galbraith, American Capitalism (Houghton Mifflin; 2d ed., 1956).

of income differences—though the effectiveness of such differences in guiding shifts under existing conditions is already open to question.

Similarly, the profit system fails to work to guide investment allocations when the lucky investors in the most profitable oligopolistic corporations can maintain a perpetual monopoly of their favored position, with new capital coming mainly through plowing a part of profits back in while maintaining a profit margin for ample dividends above taxes and corporate savings and restricting the rare new stock issues to previous stock owners. Under such conditions the theory that the high profits are justified because they attract needed investment seems at wide variance with the facts. It would seem, instead, that industries with productivity rising more rapidly than the average should follow both price and profit policies which result in the real prices of their products falling rather than rising and should raise capital required for expansion by the sale of new stock rather than keeping current profits high enough for capital investment plus dividends.

Beveridge many years age, in his Full Employment in a Free Society, and more recently Lindblom, in his article, "The Union as a Monopoly," emphasized that in democratic societies with conditions of substantially full employment and widespread oligopoly, there are no effective economic restraints on the power of unions and managements to push up wages and prices in a gradual but continuous spiral of inflation. This means that workers and owners in such industries may continuously improve their relative position at the expense of less protected elements of the society—workers in other industries, white-collar employment, and farmers.

Thorough re-examination of the distribution of the gains from increasing productivity along the lines suggested here should contribute to a better understanding of what has been happening. Further, it might help in time to develop more restraint by those who hold or influence these great powers—leaders of labor, business, farmers, and government—and more consideration of the general welfare in their use.

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<sup>&</sup>lt;sup>14</sup> Quarterly Journal of Economics, November, 1948, pp. 671-697.

## APPENDIX TABLE 1

#### Changes in Productivity and Related Factors—1940 in Relation to 1923 (All expressed as percentages of 1923)

Industry   Productivity per Man-hour   Prices   Earnings Average   Concentation   Tation   Tation						
Silk and rayon         362         n.a.         105         16         I           Tires and tubes         341         53         145         81         IV‡           Petroleum         280         60         153         38         I           Pulp         271         88         137         23         I           Glass         215         n.a.         142         45         III           Tobacco         210         100         134         74         III           Agricultural implements         209         94         135         72         II           Chemicals         204         84         164         40         I           Group average         286         71         141         51           Knit goods         187         n.a.         130         5         III§           Knit goods         187         n.a.         130         5         III§           Knit goods         187         n.a.         130         5         II§           Knit goods         187         n.a.         130         5         II§           Knit goods         187         n.a.         136	Industry	ity per	Prices	Average	tration	tion
Silk and rayon         362         n.a.         105         16         I           Tires and tubes         341         53         145         81         IV‡           Petroleum         280         60         153         38         I           Pulp         271         88         137         23         I           Glass         215         n.a.         142         45         III           Tobacco         210         100         134         74         III           Agricultural implements         209         94         135         72         II           Chemicals         204         84         164         40         I           Group average         286         71         141         51           Knit goods         187         n.a.         130         5         III§           Knit goods         187         n.a.         130         5         III§           Knit goods         187         n.a.         130         5         II§           Knit goods         187         n.a.         130         5         II§           Knit goods         187         n.a.         136	Parron	186	10	156	7.4	TTT
Tires and tubes			1			
Petroleum						
Pulp						IV‡
Pulp	Petroleum	280	60	153	38	I
Glass		271	88	137	23	I
Tobacco						
Agricultural implements.         209         94         135         72         III           Chemicals.         204         84         164         40         I           Group average.         286         71         141         51           Knit goods.         187         n.a.         130         5         II§           Iron and steel.         183         81         146         52         III           Motor vehicles.         173         89         136         69         IV           Cotton, New England.         179         57         103         8         I           Cement.         178         84         126         30         I           Cement.         178         84         126         30         I           Caming and preserving.         171         n.a.         128         23         II           Nonferrous metals.         168         82         127         38         III           Boots and shoes.         167         108         96         26         II           Newspapers and periodicals.         165         n.a.         126         20         III           Leather. <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>						
Chemicals         204         84         164         40         I           Group average         286         71         141         51           Knit goods         187         n.a.         130         5         III§           Iron and steel         183         81         146         52         IIII           Motor vehicles         173         89         136         69         IV           Cotton, New England         179         57         103         8         I           Cement         178         84         126         30         I           Canning and preserving         171         n.a.         128         23         I           Nonferrous metals         168         82         127         38         III           Boots and shoes         167         108         96         26         II           Newspapers and periodicals         165         n.a.         126         20         III           Leather         161         89         126         23         II           Group average         173         84         124         29           Paper         159         88†† <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td></td<>						
Group average   286						
Rnit goods	Chemicals	204	84	104	40	1
Iron and steel	Group average	286	71	141	51	
Iron and steel	Knit goods	187	n.a.	130	5	TT8
Motor vehicles.         173         89         136         69         IV           Cotton, New England         179         57         103         8         I           Cement         178         84         126         30         I           Canning and preserving         171         n.a.         128         23         I           Nonferrous metals         168         82         127         38         III           Boots and shoes         167         108         96         26         II           Newspapers and periodicals         165         n.a.         126         20         III           Leather         161         89         126         23         II           Group average         173         84         124         29           Paper         159         88††         123         14         I           Fertilizers         157         68         121         26         I***           Cane sugar         155         99         132         70         II           Paint and varnish         153         85         137         32         n.a.           Flour         149         92	Iron and steel					
Cotton, New England         179         57         103         8         I           Cement         178         84         126         30         I           Canning and preserving         117         n.a.         128         23         I           Nonferrous metals         168         82         127         38         III           Boots and shoes         167         108         96         26         II           Newspapers and periodicals         165         n.a.         126         20         III           Leather         161         89         126         23         II           Group average         161         89         126         23         II           Group average         159         88††         123         14         I         I           Fertilizers         157         68         121         26         I**         1           Cane sugar         155         99         132         70         II         11         12*         11         1         12*         12*         12*         12*         12*         12*         12*         12*         12*         12*         12*         1						
Cement         178         84         126         30         I           Canning and preserving         171         n.a.         128         23         I           Nonferrous metals         168         82         127         38         III           Boots and shoes         167         108         96         26         II           Newspapers and periodicals         165         n.a.         126         20         III           Leather         161         89         126         23         II           Group average         161         89         126         23         II           Group average         159         88††         123         14         I           Fertilizers         157         68         121         26         I***           Cane sugar         155         99         132         70         II           Paint and varnish         153         85         137         32         n.a.           Flour         151         78         116         29         I           Lumber         149         92         111         5         I           Woolen and worsted         146 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
Canning and preserving.         171         n.a.         128         23         I           Nonferrous metals.         168         82         127         38         III           Boots and shoes.         167         108         96         26         II           Newspapers and periodicals.         165         n.a.         126         20         III           Leather.         161         89         126         23         II           Group average.         161         89         126         20         III           Group average.         161         89         126         23         II           Group average.         159         88††         123         14         I           Fertilizers.         157         68         121         26         I**           Cane sugar.         155         99         132         70         II           Paint and varnish.         153         85         137         32         n.a.           Flour.         151         78         116         29         I           Lumber.         149         92         111         5         I           Woolen and worsted. </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
Nonferrous metals	Cement					
Boots and shoes.	Canning and preserving					
Newspapers and periodicals.	Nonferrous metals			127		l III
Newspapers and periodicals.	Boots and shoes	167	108	96	26	II
cals.       165       n.a.       126       20       III         Group average       161       89       126       23       III         Group average       173       84       124       29         Paper.       159       38††       123       14       I         Fertilizers       157       68       121       26       I**         Cane sugar       155       99       132       70       II         Paint and varnish       153       85       137       32       n.a.         Flour       151       78       116       29       I         Lumber       149       92       111       5       I         Woolen and worsted       146       80       122       24       III         Furniture       142       70       103       6       II         Group average       151       83       121       26         Slaughter and meat packing       137       96       127       56       II         Planing mills       133       n.a.       91       5       n.a.         Coke       130       89       103       49       III§ <td>Newspapers and periodi-</td> <td></td> <td>1</td> <td></td> <td></td> <td></td>	Newspapers and periodi-		1			
Leather	cals	165 1	n.a.	126	20	TTT
Group average						
Paper	Deather			120	20 ,	
Fertilizers         157         68         121         26         I**           Cane sugar         155         99         132         70         II           Paint and varnish         153         85         137         32         n.a.           Flour         151         78         116         29         I           Lumber         149         92         111         5         I           Woolen and worsted         146         80         122         24         II           Furniture         142         70         103         6         II           Group average         151         83         121         26           Slaughter and meat packing         137         96         127         56         II           Planing mills         133         n.a.         91         5         n.a.           Coke         130         89         103         49         III§           "Other" rubber         129         n.a.         133         33         IV‡           Cotton, South         123         57         114         8         I           Clay products         121         n.a. <td< td=""><td>Group average</td><td>^ <b>173</b></td><td>84</td><td>124</td><td>29</td><td></td></td<>	Group average	^ <b>173</b>	84	124	29	
Cane sugar         155         99         132         70         II           Paint and varnish         153         85         137         32         n.a.           Flour         151         78         116         29         I           Lumber         149         92         111         5         I           Lumber         149         92         111         5         I           Woolen and worsted         146         80         122         24         II           Furniture         142         70         103         6         II           Group average         151         83         121         26    Slaughter and meat packing           ing         137         96         127         56         II           Planing mills         133         n.a.         91         5         n.a.           Coke         130         89         103         49         III§           Wother" rubber         129         n.a.         133         33         IV‡           Cotton, South         123         57         114         8         I           Clay products         121	Paper	159	88††	123	14	I
Cane sugar         155         99         132         70         III           Paint and varnish         153         85         137         32         n.a.           Flour         151         78         116         29         I           Lumber         149         92         111         5         I           Woolen and worsted         146         80         122         24         II           Furniture         142         70         103         6         II           Group average         151         83         121         26           Slaughter and meat packing         137         96         127         56         II           Planing mills         133         n.a.         91         5         n.a.           Coke         130         89         103         49         III§           "Other" rubber         129         n.a.         133         33         IV‡           Cotton, South         123         57         114         8         I           Clay products         121         n.a.         106         19         I           Bread and bakery         112         101	Fertilizers	157	68	121	26	I**
Paint and varnish         153         85         137         32         n.a.           Flour         151         78         116         29         I           Lumber         149         92         111         5         I           Woolen and worsted         146         80         122         24         II           Furniture         142         70         103         6         II           Group average         151         83         121         26           Slaughter and meat packing         137         96         127         56         II           Planing mills         133         n.a.         91         5         n.a.           Coke         130         89         103         49         III§           "Other" rubber         129         n.a.         133         33         IV‡           Cotton, South         123         57         114         8         I           Clay products         121         n.a.         106         19         I           Bread and bakery         112         101         120         18         II           Group average         126         86	Cane sugar	155	99	132	70	TT
Flour.         151         78         116         29         I           Lumber.         149         92         111         5         I           Woolen and worsted         146         80         122         24         II           Furniture.         142         70         103         6         II           Group average.         151         83         121         26           Slaughter and meat packing.         137         96         127         56         II           Planing mills.         133         n.a.         91         5         n.a.           Coke.         130         89         103         49         III§           "Other" rubber.         129         n.a.         133         33         IV†           Cotton, South.         123         57         114         8         I           Clay products.         121         n.a.         106         19         I           Bread and bakery.         112         101         120         18         II           Group average.         126         86         113         27	Paint and varnish	,				1
Lumber         149         92         111         5         I           Woolen and worsted         146         80         122         24         II           Furniture         142         70         103         6         II           Group average         151         83         121         26           Slaughter and meat packing         137         96         127         56         II           Planing mills         133         n.a.         91         5         n.a.           Coke         130         89         103         49         III§           "Other" rubber         129         n.a.         133         33         IV‡           Cotton, South         123         57         114         8         I           Clay products         121         n.a.         106         19         I           Bread and bakery         112         101         120         18         II           Group average         126         86         113         27						
Woolen and worsted         146         80         122         24         II           Furniture         142         70         103         6         II           Group average         151         83         121         26           Slaughter and meat packing         137         96         127         56         II           Planing mills         133         n.a.         91         5         n.a.           Coke         130         89         103         49         III§           "Other" rubber         129         n.a.         133         33         IV‡           Cotton, South         123         57         114         8         I           Clay products         121         n.a.         106         19         I           Bread and bakery         112         101         120         18         II           Group average         126         86         113         27						
Furniture         142         70         103         6         II           Group average         151         83         121         26           Slaughter and meat packing         137         96         127         56         II           Planing mills         133         n.a.         91         5         n.a.           Coke         130         89         103         49         III§           "Other" rubber         129         n.a.         133         33         IV‡           Cotton, South         123         57         114         8         I           Clay products         121         n.a.         106         19         I           Bread and bakery         112         101         120         18         II           Group average         126         86         113         27	Lumper					
Group average         151         83         121         26           Slaughter and meat packing         137         96         127         56         II           Planing mills         133         n.a.         91         5         n.a.           Coke         130         89         103         49         III§           "Other" rubber         129         n.a.         133         33         IV‡           Cotton, South         123         57         114         8         I           Clay products         121         n.a.         106         19         I           Bread and bakery         112         101         120         18         II           Group average         126         86         113         27						
Slaughter and meat packing         137         96         127         56         II           Planing mills         133         n.a.         91         5         n.a.           Coke         130         89         103         49         III§           "Other" rubber         129         n.a.         133         33         IV‡           Cotton, South         123         57         114         8         I           Clay products         121         n.a.         106         19         I           Bread and bakery         112         101         120         18         II           Group average         126         86         113         27	Furniture	142	70	103	0	11
ing         137         96         127         56         II           Planing mills         133         n.a.         91         5         n.a.           Coke         130         89         103         49         IIII§           "Other" rubber         129         n.a.         133         33         IV‡           Cotton, South         123         57         114         8         I           Clay products         121         n.a.         106         19         I           Bread and bakery         112         101         120         18         II           Group average         126         86         113         27	Group average	151	83	121	26	
ing         137         96         127         56         II           Planing mills         133         n.a.         91         5         n.a.           Coke         130         89         103         49         IIII§           "Other" rubber         129         n.a.         133         33         IV‡           Cotton, South         123         57         114         8         I           Clay products         121         n.a.         106         19         I           Bread and bakery         112         101         120         18         II           Group average         126         86         113         27	Slaughter and meat pack-					
Planing mills       133       n.a.       91       5       n.a.         Coke       130       89       103       49       III§         "Other" rubber       129       n.a.       133       33       IV‡         Cotton, South       123       57       114       8       I         Clay products       121       n.a.       106       19       I         Bread and bakery       112       101       120       18       II         Group average       126       86       113       27		137	96	127	56	п
Coke         130         89         103         49         III§           "Other" rubber         129         n.a.         133         33         IV‡           Cotton, South         123         57         114         8         I           Clay products         121         n.a.         106         19         I           Bread and bakery         112         101         120         18         II           Group average         126         86         113         27	Planing mills					1
"Other" rubber       129       n.a.       133       33       IV‡         Cotton, South       123       57       114       8       I         Clay products       121       n.a.       106       19       I         Bread and bakery       112       101       120       18       II         Group average       126       86       113       27						
Cotton, South       123       57       114       8       I         Clay products       121       n.a.       106       19       I         Bread and bakery       112       101       120       18       II         Group average       126       86       113       27	"Other" rubbar		i			
Clay products       121       n.a.       106       19       I         Bread and bakery       112       101       120       18       II         Group average       126       86       113       27	Cotton Court					
Bread and bakery         112         101         120         18         II           Group average         126         86         113         27	Cotton, South					
Group average						
	Bread and bakery	112	101	120	18	11
Grand average	Group average	126	86	113	27	
	Grand average	188	80.5	126	34	

Source: Garbarino, Quarterly Journal of Economics, May, 1950, page 282; except as noted.

\* Per cent of industry's production in 4 largest concerns.

† From Ross and Goldner, Quarterly Journal of Economics, May, 1950, page 258. I=0-40
per cent unionized; II, 40-60; III, 60-80; IV, 80-100.

† "Rubber products" in 1945.

§ Data for 1945; earlier years unavailable.

\*\* From "chemicals except rayon."

† Puln and paper.

<sup>††</sup> Pulp and paper. n.a. = not available.

### TABLE 2 REAL GROSS INCOMES PER WEEK, IN 1955 DOLLARS, OVER-ALL AND IN SELECTED OCCUPATIONS

(Deflated by city cost-of-living index, except for farmers)

	1929	1940	1950	1955
Per capita gross personal income, all gainfully occupied workers*	54	61	79	88
worker*	51	58	72	78
Workers in physical production				
Nondurable manufacturing.  Durable manufacturing.  Employees, U. S. Steel Corporation†.  Bituminous coal.  Building construction.	36 43 49 40 n.a.	43 54 64 47 61	61 71 78 82 82	68 77 101 95 96
Workers in distribution and services				
Class I railways. Wholesale trade. Retail trade. Telephones. Laundries.	n.a. n.a. n.a. n.a. n.a.	62 58 45 63 34	72 67 53 61 40	82 77 59 72 41
White-collar workers				
Federal employees. School teachers. Other state and local government.	54 40 42	68 47 49	75 61 52	82 70 61
Professional occupations				
Physicians. Dentists. Lawyers.	150 123 138	163 122 166	264 158 183	n.a. n.a. n.a.
Farmers				
Average, all farm workers†	20	21	36	32

SOURCES: Economic Report of the President, January, 1956; Historical Statistics of the U.S., 1789–1945; Statistical Abstract of the U.S., 1954, 1956.

\* Including persons in military employment.

† From Tables 1 and 2, in the text.

#### DISCUSSION

ARTHUR KEMP: Considering the limitations of time and space, I shall confine myself to comment on Professor Tybout's excellent paper and to some problems it suggests. The questions of particular interest to me might be termed "the political economy of nuclear power" rather than the pure economic factors, to which Mr. Tybout has dedicated his paper.

Mr. Tybout pointed out, quite correctly, that nuclear power technology is being developed under a "joint government-business program" with, at least at present, the added objective of building a privately-owned and operated nuclear power industry. Perhaps one should raise a question concerning the use of the word joint in this instance. It is difficult to conceive of a truly joint undertaking unless there is independence—and I think this is far from the truth in this case. What has been happening is that we have raised questions concerning the future development of a nuclear produced electric power industry. The basic raw materials, of course, have been produced up to the present under government auspices and title to them rests with the government. I think we can all agree that whether nuclear power shall be public or private is not a question capable of being answered on purely economic grounds. We cannot avoid the issue; we must soon decide what is to be the role of government in the nuclear power industry.

At very least since 1954, the program of the AEC has been in the direction of increasing private enterprise production of electricity from nuclear sources. This program, as Mr. Tybout noted, seems likely to be expanded in the next session of Congress. An attempt was made during the last session of Congress to expand the extent of public production of electric power. The questions arising at that time will undoubtedly arise again. In addition, comments in Congress and out—and at various times during the recent election campaign—indicate quite clearly that the nature of this program is in a state of flux. The basic decisions have not been finally made.

Early last year, Senator Gore, of Tennessee, introduced a bill into the Senate calling for a stepped-up program of government construction and operation of atomic power plants. The essence of the bill was to direct the AEC to construct a series of large-scale atomic power plants. Later, after a number of changes reducing the public-power character of the original bill, the Senate passed it by vote of 49 to 40. But in the House, after several amendments in the same general direction as those made in the Senate, the bill was defeated by 203 to 191. The AEC and the Administration opposed the bill both in the House and the Senate.

The significance of this lies in the fact that we must decide whether we are to achieve an economically competitive power program or whether we are to engage in a widespread development of a nationalized nuclear power program. This, of course, is not the first time that war or defense activities have raised this question. Most frequently the question has been answered

in favor of government activity rather than private. In fact, it might be pointed out that war and the fear of war have proved to be the greatest possible threats to the continued existence of free societies.

A former member of the AEC, Henry de Wolf Smyth, writing in the October issue of Foreign Affairs, expresses regrets that plans for the development of electricity from nuclear sources are "clouded by controversy arising out of the old public versus private power controversy." I must confess being unable to see why discussion of this question is an undesirable thing and why it is not a valid political issue. Any industry closely related to the producton of electric power, as is the atomic industry, cannot hope to avoid questions of political significance. Questions of public versus private power and questions of the kind or the extent of socialization or nationalization of industry in the United States are—and in my opinion ought to be—vigorous political issues. There can be no doubt that the amount of federally-owned electrical generating capacity has increased from a few hundred thousand kilowatts to about twelve million kilowatts in the past twenty-odd years. The proportion of federally-owned capacity has increased from about 2/3 of 1 per cent in 1933 to about 15 per cent in 1955; if one considers hydroelectric capacity alone, the federal percentage is overwhelming.

Those who favor centralized economic planning or socialism in the sense of government ownership and operation of the basic industries of the country should be greatly concerned about the role of government in the future of atomic power. The straightforward socialist ought logically to favor retaining nuclear produced electric power as a federal monopoly. If this be done not only for electric power but for other aspects of atomic energy, the the degree of central direction of economic affairs will be greatly increased.

Although I have no objection to those who believe in this fashion expressing themselves as vigorously as they are able to do, some of the arguments which have been used could stand further examination. Take, for example, the hearings on the Gore bill, the Smyth article I mentioned, and the speech delivered by Adlai Stevenson on October 9, 1956, at Seattle, Washington. Several points keep reappearing: One of these is the assertion that the United States government ought to own and operate nuclear power plants so that this will be done before the Russians do it. The purpose, please note, is not to do so because it is economically feasible or cheaper, but lest otherwise we "lose the race" for the production of atomic power—whatever that may mean or imply. A second argument is that private utilities have not produced electric power "fast enough." I confess I do not know what fast enough means unless one says fast enough for some purpose.

There are also the innumerable political push-pulls—some interesting, some significant, some obvious, and others boring. Take the difference of opinion between two labor leaders. Andrew McMahon, Chairman of the Power and Atomic Energy Committee of the A.F.L.-C.I.O. Utility Workers Union, appeared as a witness against the Gore bill because, he said, "you can't bargain collectively with government, and governments don't have profits to divide with anyone." Walter Reuther, on the other hand, urged passage of the bill because the present American power program, he said,

was "shockingly inadequate" when compared to that of Russia and England. Later in the year, it is amusing to note, some of the same people who vigorously proclaimed private industry was not moving fast enough in the direction of nuclear produced power objected just as vigorously to the issuance of a permit to Detroit Edison Company for a 100,000 kilowatt nuclear plant near Monroe, Michigan.

I have tried to present the case for developing atomic power within the competitive enterprise framework in a booklet called The Role of Government in Developing Peaceful Uses of Atomic Energy. There is little to be gained from repeating it here. But it seems to me we must face these questions with care. There already has been too much Sunday-supplement approach to atomic energy, particularly in the promises, real or imagined, of atomic electric power. Even if there were no questions of socialization or nationalization, the military significance of atomic energy and the somewhat limited ability of even the highly educated American citizenry to assess the consequences of alternative policies provide temptations for the demagogue. Certain of the so-called "backward" regions of Asia, Africa, and even South America seem to make the rather naïve assumption that, by introducing atomic electric power, an Aladdin's lamp will provide them with all the benefits stemming from centuries of technological progress. In many ways this belief is disturbing, if not frightening, for in most of these regions it would be equally profound a revolution if someone were to introduce central electric power stations burning coal or oil. Furthermore, it is highly unlikely in the foreseeable future, as Mr. Tybout has pointed out so effectively, that fissionable materials will displace combustibles even in the field of electric power. For a long time to come, no matter what our politico-economic decisions may be, economic forces will compel us to produce a rather large proportion of our electric power from the traditional fossil fuels. The English experiment at Calder Hall is not an exception to this. The decision to construct the plant was reached on other than economic grounds and, in fact, it is more realistic to look upon Calder Hall at the present time as a producer of plutonium for military purposes with a by-product of electrical energy than as a truly economical nuclear power plant.

I hope we can have more thoughtful papers on atomic energy such as Mr. Tybout's represents and a wider distribution of them. For there are certainly dangers. The less atomic energy is understood, the more likely it is that mistrust can be implanted in the public mind and the more temptations for demagoguery.

For myself, I hope that we can achieve a program which will develop the AEC, so far as peaceful uses of atomic energy are concerned, into a purely regulatory agency having as its chief functions the protection against health and safety hazards, the inventorying and protecting of the nation's stock of fissionable materials, fostering research, and maintaining freedom of entry into and exit from a competitive nuclear power industry. I hope we shall avoid both subsidization and government guaranteed and controlled markets for nuclear products. If we can bring ourselves to give industry a maximum degree of freedom and if we decide questions primarily on economic

grounds, the more likely we are to discover the most economical and efficient forms of reactors and the less likely we are to misuse our resources. This also is likely to be the way we can contribute most to the economic advance of all the world.

CARROLL L. CHRISTENSON: My central proposition is that in our search of determinate solutions we define economic problems too narrowly both in omission of critical elements and in confining analysis within the boundaries of the closed national economy.

This I propose to illustrate from the papers we have been privileged to hear. The first illustration I take from Professor Brozen's treatment of the U. S. Steel Corporation's investment in the new Fairless works. He states: "As a matter of fact the investment would not be economic at the wage rates prevailing at the time the plant was built."

Let us consider the nature of the steel industry. It is a converter of raw materials dug from the ground; it cannot go on unless there is something to dig. To paraphrase the Red Queen in her remarks to Alice, "For this sort of an industry it takes all the running you can do to keep in the same place." Specifically, the technical advance in manufacturing greater quantities of steel with the same or less human effort per ton also absorbs greater quantities of coal and ore reserves as total output expands.

Although I have referred to Alice's imaginary run with the Red Queen, the necessity for continuing investment in order to make up for the destruction of masses of raw materials is not a mere fairy story for the steel industry. In the six years of World War II (1940-45), the industry extracted an amount of ore from the Mesabi range equal to about 20 per cent of the entire tonnage used during the preceding eight decades. Fortunately, the postwar search for new ore bodies, taken as a whole, met with fantastic success. The Cerro Bolivar deposits of Venezuela alone appear to be equal in quality and quantity to the original Mesabi range.

Now turn back to Professor Brozen's remarks. It may be correct, as he suggests, that future increases in labor costs were an element in the decision to invest in the Fairless works. But more significant elements in this decision are revealed in the fact of the location of the works on the Delaware River at the extreme eastern boundary of Pennsylvania. Whatever the construction costs of the new plant, this location reorients U. S. steel production facilities so as to welcome ore supplies from the Venezuela mines by sea at minimum cost. Hence, the case suggests to me that investment decisions of this type encompass much more than the specific costs of the plant. However, if we expand our view in space as well as extend it in time, the problem becomes so complex as to defy mathematical precision. If an old firm can foresee the future of the industry and establish continuing supply sources adequate for its own growth for another half century, then the question of the relation of fixed capital to labor cost for a prospective new plant becomes incorporated with the costs of the entire venture and loses its separate identity.

If this is correct, it also means that gains in productivity for individual operations may be offset by costs which they impose in other directions. In

spite of this, as Dr. Ezekiel suggests, there have been net efficiency gains. It would be unfair for me to speak of Dr. Ezekiel's treatment of distribution in the steel case, as I intend to do, without recognizing his extended review of other industries. Moreover, it would also be negligence if I did not remind you that he refers to his paper as a "preliminary reconnaissance." Most of the points that I should like to make he has recognized as omissions; so I will do little more than indicate that I think his loopholes are bigger than he does.

I begin with his remark concerning the steel industry. He says that "consumers have received none of the gains." This is based on the showing that, save for inflationary changes, steel prices have remained almost constant since 1920. I would ask: Has there been any increase in the amount of steel available per capita during this period? If so, then the fact of constant prices indicated that consumers have had some share of the gains. In the absence of technological advance, an industry using a shrinking natural resource is almost certain to operate at long-run increasing costs. Therefore, consumers would have to adjust to less output at the old expenditure or direct a larger total outlay to maintain the same consumption volume.

One omission demands brief attention: this is the matter of increases in taxation. Take the 1955 Annual Report of the U. S. Steel Corporation, which Ezekiel used in the construction of his Table 1. We find that in the forty-five years since 1910, taxes have increased from about 3 to over 10 per cent of gross sales. May I also remind you that during this period we have broadened the individual income tax structure to include virtually the entire work force, increased rates, and introduced the principle of pay-as-you-go deductions to make it easy for industrial workers to pay the tax and also extremely difficult for them to escape doing so. Add to this the fact of a progressive tax structure and it becomes clear that advances in wage payments often do not result in an equivalent increase in disposable income.

How much all these items will affect the total take-home pay of workers I do not know. This is not the place to open a debate as to whether we are actually getting more or better government for the increasing amounts that we spend for that purpose; but it is in point to insist that before we can approximate a final judgment on the "distribution of gains from rising technical efficiency," the very great increases in governmental costs must be given substantial and not just passing attention.

Nowhere is there stronger support for the opinion that government has a claim on the gains from rising technical efficiency than in the consideration of the economics of nuclear power. Hence I begin consideration of Professor Tybout's paper by saying that here we have a new power source made possible only because of large-scale government research fifteen years ago. True, it was then because of wartime objectives; however, even now, as Tybout correctly emphasizes, "AEC is sponsoring most of the industrial research for nuclear power."

If there is anything that reveals how much we economists suffer from intellectual paralysis because we start out with the concept of the closed national economy, it is the issue of nuclear power. Reflect, if you will, on

the meaning of what I consider Professor Tybout's most significant sentence, which reads: "Because it is almost weightless and sizeless for its energy content, nuclear fuel prices will be practically unaffected by transportation costs."

In the late twenties I heard Sir William Beveridge discuss Henry Clay's theory which explained prolonged unemployment in England following the first World War as due to the restoration of the pound to its prewar parity. He concluded in about these words: The point I want to make is that if that isn't the explanation, then it is so much the worse for England, for then it means that an economy based on coal has been worn out.

Put Beveridge's statement alongside Tybout's observation about the weightless character of nuclear fuel. Then look at the current strenuous effort of the British National Coal Board to raise annual output above 220 million tons, observe the actual development of electric power from nuclear fuel in Britain, and for good measure add a look at the Suez Canal. Now that you have broken through the concept of the national closed economy, review the upward surge of coal exports from the U.S. during these last two years. Remember that it costs as much or more to transport a ton of coal across the Atlantic as it does to buy it from the mines. When in your expanded horizon you see an energy-hungry industrial world seeking to maintain its operation, then look again at Tybout's telling reference to the "weightless" and "sizeless" character of nuclear fuel; see it with your new trifocals which encompass not merely here and now, but the universe and tomorrow. In doing so, stretch your vision to see that it is not only nuclear fuel itself that has virtually no transportation cost, but also note that ideas that gave it birth move without transportation cost in the largest free-trade market of the world. It will then become clear that the "economics of nuclear power" will determine a large part of the character of the world in which we and coming generations will live our lives.

Solomon Barkin: The growing awareness of the importance of rising productivity in elevating living standards and strengthening our economy has increased interest in the problems of measurement and analysis of and the methods for effecting growth. Older economic problems are being reformulated in this framework. The issues have acquired a new urgency since the rising rate of productivity increases has intensified the need for facing up to them.

The three papers focus most directly on questions of great concern to the country. Their major contributions are in their emphasis on the need for study rather than in the presentation of any final analysis. In fact, the materials essential for definitive conclusions are not available. The first, by Richard A. Tybout, raises the question of how we can best promote industrial research and insure its widest dissemination and utilization while avoiding restrictive, monopolistic use by private interests. The practical problem is: How shall public investment in technological knowledge be combined with private use and development? The second question, raised by Yale Brozen in his paper, is whether economic stability is assured by the present

patterns of annual wage increases, wage legislation, savings habits, and tax laws. Are we providing the purchasing power and capital necessary for stable growth in our economy? Do we have enough savings to finance an economy enjoying a higher rate of productivity? The third, by Mordecai Ezekiel, focuses on the manner and form in which productivity gains have been distributed within each industry, among industries, and as between consumers and producers. He raises the question of the equity of past and current patterns of distribution and their effectiveness in allocating resources. Have we reached the point where the strong organizations of private interests are not sufficiently counteracting each other or, in many areas, not balanced by forces of adequate magnitude to assure the full realization of the public interest? Do we have to interject new guides for, or even restraints on, the conduct of the business society to promote orderly economic growth, stability, and equity?

Professor Tybout's paper on the "Economics of Nuclear Power" presents a comparison of trends in the costs of nuclear and conventional power as developed for the Citizens' Panel on the Impact of the Peaceful Uses of Atomic Energy. But estimates of costs derived from blueprints are surmises. Only actual operating experience can provide the base for real calculations. Further construction of "demonstration" plants is necessary to develop the savings and economies which only experience and definite knowledge will provide. The reluctance of private industry to participate fully in the program has delayed such exploration at a time when international policy and domestic needs dictate the greatest speed in research and experimentation. There is a growing insistence that the government proceed to construct and operate demonstration plants.

On the other hand, there have been complaints that existing legal restraints impede private industry's use of the basic knowledge developed by government-financed research. Although these limitations are generally necessary to protect the public interest, a method of operation should be developed to encourage further private investments in the application of scientific knowledge.

Yale Brozen sees employment contracting in one of the four models produced by technological innovations. Those which result from a rising national stock of capital, from capital saving inventions which release capital, or from labor saving inventions which raise labor's marginal productivity have the effect of producing higher wages and low capital costs and, consequently, a continued growth of the economy. But inventions which induce a capital flow to industries utilizing more than an average amount of capital per worker, which use less labor than was formerly needed, or which release capital with a lower ratio to released labor than the average prevailing in other industries are likely to create unemployment. Large quantities of capital will then be needed to employ the displaced workers. Since many of our significant technical developments resemble this fourth model, the nation will be chronically confronted with the challenge of unemployment in an era of high technical change. Only a supply of capital adequate to provide jobs for the displaced workers can therefore keep our economy stable.

No discussion of automation should minimize the problems of adjustment, since this technical innovation, along with others, is raising the rate of change and therefore intensifying these problems. Greater numbers of new jobs must be financed at higher capital costs. These adjustments assume staggering proportions when they are concentrated in specific industries or areas. The textile industry now employs 950,000 production workers, but in February, 1951, there were 1,269,000 employed. This displacement has created chronically distressed communities in many eastern states. These areas, along with others affected by technical and economic changes, have become such a national problem that specific financial aid was proposed for their rehabilitation by both presidential candidates in the last election.

This paper reaches sweeping conclusions on the basis of simple analysis and therefore markedly contrasts with the third paper, which high lights the differential effects of gains from productivity for various segments of the economy. The limitations of marginal analysis should be apparent to a student of automation, since this process creates work teams and whole systems of capital investment which cannot be broken up into small units of labor or capital.

Experience hardly justifies the expectation that automated industry, with its large capital investment and its tendency to oligopolistic organization, will resort to price reductions to increase demand. The companies which have agreed to supplementary unemployment insurance programs have been among those which had had least difficulty in financing their capital needs.

One major issue raised in the appendix to this paper is the method of encouraging higher rates of savings and investments to insure a constant flow of capital and to raise the marginal productivity of labor. Can we assume that our present rate of demand for capital will continue and that the current rate of savings is not adequate to provide capital at low interest costs? In view of the large volume of government expenditures, may not capital requirements for public investment be provided to a greater extent than is true currently through tax revenue, thereby avoiding public protests against the favored treatment of the higher income groups proposed by the writer? May not the balance be restored more effectively by direct control of investments, not only of producers' capital equipment, but also of public facilities and the allocation of scarce bottleneck materials?

Mordecai Ezekiel uses a broader vista for appraising the patterns of distribution of productive gains. While assaying the trends, he is the first to confess the inadequacy of his data and analysis. A multitude of factors are at play, and even more pertinently, distribution patterns vary at different times, each resulting from particular social and economic conditions.

He recognizes that one cannot blanket together "two unlike epochs—the twenties and the New Deal reforms after 1933." From prior studies, the writer concludes that "from 1920 to 1929, the gain in real national income was accompanied by large increases in profits, but not by increases in real income of workers and this may have contributed to the subsequent Great Depression." He is led to speculate that data for 1929 to 1940 "might reveal how the social distribution of productivity gains behaved during the 1929

boom and collapse and how it was affected by subsequent reforms of the Roosevelt administration." Why does the author join these two or three periods into one span? Are not the conclusions based on a single span for these years therefore suspect? Similarly, the value of the analysis of the years 1940 to 1955 as one epoch is highly questionable. The war period should be considered separately from the postwar period. The findings are substantially different for the two eras ranging from 1940 to 1947 and from 1947 to date.

His major interest, however, is to see what could be discerned with an "elementary analysis" of the meager data for the United States which he had collected. The deficiencies of his data and his anxiety to formulate conclusions result in some highly questionable findings. The study of trends in the manufacturing industries between 1923 and 1940 uses estimates of the 1940 degree of unionization for the year 1942. Less than adequate measures of price changes, which must make allowances for material costs, throw doubt on the observations of price movements.

Of what significance is the conclusion (obviously the only one supported by the figures in Table 2) that there was "a positive relation between productivity and changes in earnings" and that "a substantial part of the greater productivity per hour was reflected in higher wages per hour," when the writer further notes, as quoted above, no increase in "real income of workers" in the twenties? Relevant in this connection is the footnote to Table 3 which reports that "for the few manufacturing and nonmanufacturing industries for which data . . . are available for 1940 to 1950, the averages show . . . some negative correlation between productivity change and real earnings per week."

"Rough computations" were made for trends in manufacturing industries from 1940 to 1955. They do not reveal the most significant single recent finding in the field of productivity statistics, reported by John W. Kendrick, that "the rate of productivity since 1948, on the surface, suggests some acceleration in productivity growth in the private economy since World War II."

The discussion of the steel industry suffers from the fact that the data are primarily for the United States Steel Corporation, which is engaged in many activities in addition to steel production. It is probable that the proportion of its entire productive organization which basic steel operations constitute has declined over a period of time; as a result, the productivity data are not truly useful. Whereas Table 1 shows a 155 per cent rise in productivity per man-hour and a 60 per cent rise of productivity per worker from 1920 to 1955, the figures published by the U.S. Bureau of Labor Statistics for a similar period show rises of 240 and 129 per cent, respectively. Real hourly earnings rose 196 per cent and weekly earnings 87 per cent during this period. The lag in earnings is most marked. It is improper, therefore, to conclude that "workers in the industry have retained in more leisure plus increasing buying power substantially all, or possibly even more than all, their rapid increase in productivity."

Management's share of the gains of productivity are inadequately measured by profits after taxes. Corporate income taxes were not designed as a tax on the consumer. They were intended to siphon off profits rather than to serve as a license for further price increases. Moreover, profits retained in the form of depreciation charges as well as reserves must be included in the calculation of such gains. What better evidence of the significance of these funds than the fact that so many steel companies financed their expansion primarily, and in some instances exclusively, from their own resources? The measure of returns to business must include profits before taxes, inclusive of the reserves and depreciation charges.

The writer believes that for the period from 1940, and especially since 1950, "real wages have advanced more rapidly than over-all national output." This conclusion is partially derived from the inappropriate use of weekly earnings as a measure of wages; in the three primary industries—iron and steel, bituminous coal, and building construction—substantial increases occurred between 1940 and 1955 in hours worked per week. Increases in earnings due to longer hours are not relevant to the discussion. Moreover, conclusions for the war period are highly debatable because the measures of productivity for this span of years are of questionable character. The U.S. Bureau of Labor Statistics reports a 4.3 per cent rise for the manufacturing industries for the period 1939 to 1947. On the other hand, the Joint Committee on the Economic Report estimates an 11 per cent rise in gross real national product per man-hour in the nonfarm private economy during this period.

The postwar trends show a definite lag in wages as compared to productivity increases. In the manufacturing industries, man-hour output rose by 35 per cent from 1947 to 1955, but real gross average hourly earnings increased by 26.8 per cent. The gross national product per man-hour for the private nonfarm sector rose by 28 per cent. It is unlikely that real average hourly earnings for the sector have risen in comparable proportions.

Most significantly, the paper focuses on the issue of the effect of the inequalities of worker and management gains in assuring an efficient economy. The writer recalls the current doubts of the usefulness of differences in income in providing an incentive for labor mobility. Moreover, the use of high current profits for internal investment may not result in the best allocation of resources. Current market techniques, therefore, may be operating ineffectively from the point of view of the whole economy. Weaker and unorganized segments have been neglected, and the highly profitable oligopolistic industries may be expanding at too rapid a rate in the light of broader national needs. Others have begun to question the efficacy of the market or even simple techniques of control, such as are now available to the Federal Reserve Board. The alternatives may be to encourage organization of groups to balance existing forces; more governmental supervision and direction; or more top-level agreements by representatives of the different interests on general policy respecting wages, prices, capital allocation and other economic decisions. The challenge is to find a method of guiding the private forces to assure balanced and stable economic growth.

# POWER AND PUBLIC UTILITY PROBLEMS

# TWO PARTLY CONFLICTING STANDARDS OF REASONABLE PUBLIC UTILITY RATES

By James C. Bonbright Columbia University

The Role of Rates as a Source of Corporate Revenue Versus the Role of the Same Rates as a Means of Controlling Demand for Service

This paper is a supplement to a much earlier paper, presented at the 1940 convention of the American Economic Association, which I entitled, "Major Controversies as to the Criteria of Reasonable Public Utility Rates." Then as now I was concerned with multiple objectives of rate making or rate regulation and only indirectly with methods or techniques designed to attain these objectives. But in the interval of the past sixteen years, the analysis of these various objectives has become an extremely complex subject. I have, therefore, decided to center attention on one partial conflict: the conflict that arises because, in this country and elsewhere, the same rates that are called upon to make a public utility enterprise financially self-sufficient, without resort to subsidies but without the enjoyment of excessive profits, are also called upon to control the types, the timing, and the amounts of required service, with resort to overt rationing or to other service restrictions only in emergency. For shorthand convenience, we may designate this first objective of rate-making policy the revenue-requirement or capital-attraction standard; and (we may designate) the second objective the demand-control or consumer-rationing standard. But the latter standard invokes the use of rate differentials, not merely to discourage wasteful use, but also to stimulate all use that is economically justified. The attempt to develop general principles of rate making that will secure tolerable harmony between these two quite different roles presents perhaps the most frustrating problem faced by modern rate theory.

The Related Conflict between "Fairness" or "Equity" and "Functional Efficiency" as Standards of Reasonable Rates

But before turning to the above-noted dilemma of utility rate theory, I must mention a different, though related, conflict among criteria of reasonable rates if only to avoid confusion with the one under review.

Both of the standards just distinguished are standards of functional efficiency in the control of the supply of, or the demand for, public utility services But efficiency is not the only test by reference to which rates may be adjudged good or bad, reasonable or unreasonable. On the contrary, both in legal thinking and in popular thinking there is a tendency to appraise the reasonableness of rates by a variety of considerations characterized by the terms "fairness," "equity," or "justice." Thus, in the legal cases, a valid level of rates has often been viewed as a search for a level high enough to be fair to the investors, low enough to be fair to the consumers, while a reasonable rate structure has been viewed as one based on an equitable apportionment of total costs among the different classes of customers. An early writer with an engineering background well expressed this general point of view when he gave to his entire book on rate regulation the title, What Is Fair?

If time permitted, I would be tempted to review the various conflicts between those standards of optimum utility rates now in vogue among academic economists and those standards of fair or equitable rates that have widespread influence, not only on popular thinking, but even on the techniques of cost allocation applied by professional rate engineers. A somewhat extreme illustration of this clash of ideology is to be found in the field of passenger transport, where Dr. Vickrey and other economists have favored differential fares much higher for rush-hour travel than for off-peak hours, whereas popular opinion would seem to support either equality of fares or else a differential in the opposite direction. But popular conceptions of fairness are themselves both confusing and self-contradictory, and I must leave this beguiling confusion for discussion at another time or by another speaker. Let me suggest, as a parting comment, that academic economists, despite their frequent and justified denial that issues of fairness fall within their professional competence, tend to tailor their own conceptions of fairness so as to make them comport with their own ideals of functional efficiency. In short, even attitudes about fairness or equity are appraised in-part at least as instrumental values rather than as ends in themselves. 7

# Reasons for the Partial Conflict between a Revenue-requirement Standard and a Consumer-rationing Standard

Turning now to the dual standards of functional efficiency noted at the outset of this paper—the revenue-requirement standard and the consumer-rationing standard—the existence of a partial conflict in the

<sup>&</sup>lt;sup>1</sup>William G. Raymond, What Is Fair—A Study of Some Problems of Public Utility Regulation (1918).

public utility industries is now well recognized in our profession. But even today, it receives only a limited and reluctant recognition among the practitioners in rate making and rate regulation, whereas popular thinking is unaware of its very existence.

What interferes with more widespread recognition is the apparent but specious harmony of the two roles because both call for the acceptance of a cost-of-service principle of rate making. Under the adequate-revenue test, rates as a whole must cover costs as a whole, including a capital-attracting rate of return on investment. Under the consumer-rationing test, rates for each kind and amount of service should be based on the cost of this particular service.

Of course, there are two flaws in this picture of a comfortable harmony between the two primary standards of reasonable rates. The first flaw lies in the popular assumption, still apparently shared by many sophisticated rate analysts, that the costs of specific services can be derived by some apportionment of total costs, just as a pie can be apportioned among as many people as sit at the dinner table. The second flaw lies in a failure to distinguish between the essentially sunk-cost nature of a revenue-requirement standard and the escapable-cost nature of a consumer-rationing standard.

The first reason for disharmony is stressed by the textbooks far more vigorously than the second. It arises, not because all allocations of joint or common costs are necessarily indeterminate or arbitrary, but rather because, in order to make them determinate, one must define the costs of specific services in such a way as to make them nonadditive save under conditions rare for public utility enterprises. Of necessity, these costs are differential or incremental or marginal costs. In America, though less so in Europe, it is traditional to assume that the sum of the incremental costs must fall materially short of total costs. But even if, as I feel sure, such an assumption involves a serious overgeneralization, equality between the whole and the sum of the parts can hardly arise save by happy accident. A material gap in one direction or the other must be deemed normal.

Even more important, perhaps, than this distinction between differential costs and average total costs is the necessary distinction between the very conception of cost when used as a measure of gross-revenue requirements and the conception of cost when used as a norm of consumer rationing. For obvious reasons of corporation finance, revenue requirements depend on liabilities and quasi-liabilities for the payment of operating expenses and for investor compensation based on historically incurred sunk costs, whereas the costs germane to the optimum use of existing plant capacity are those costs that can still be avoided or minimized by curtailment of output. While flexible measures

of a fair return can go a limited distance in reducing the gap between these two types of cost, especially so if implemented by possible resort to bankruptcy reorganizations or quasi-reorganizations, the reduction can seldom go to the point of complete identity or even of close approximation.

## The Futility of a Replacement-cost Rate Base as a Means of Securing Harmony

The force of the statement just made is illustrated, I think, by the history of early proposals, led by Professor Harry Gunnison Brown among the academic economists, to reconcile the revenue-requirement standard and the consumer-rationing standard through the use of a replacement-cost rate base. Advanced with this object in mind, such a proposal was doomed to failure, not only because it ignored the difference between total replacement cost and incremental cost, but also because it called for a definition of replacement cost that stood no chance of acceptance as a practical basis of rate control; namely, replacement cost of service by a hypothetical plant of modern design and of optimum capacity. How far removed this esoteric kind of replacement cost is from the so-called "fair value" standards still current in Ohio and in some other states will be apparent to anyone familiar with the rate cases.

What I have just said by no means implies that Brown's criticism of an original-cost rate base—the merits of which he and I once debated before this Association<sup>2</sup>—has been belied by later history. But I do suggest that, whenever the objections to such a rate base have proved serious if not fatal, as in the transportation field and in the production end of the natural gas business, a resort to a replacement-cost standard has failed to offer any remedy. Indeed, under price conditions prevailing today, it would be likely to make a bad situation even worse.

# Hotelling's Proposal to Abandon Any Revenue-requirement Standard

Impressed with the thought that no amount of tinkering with a revenue-requirement standard could reconcile the dual roles imposed by tradition on public utility and railroad rates, Harold Hotelling presented his now famous Presidential Address of 1937 to the Econometric Society, recommending the abandonment of any attempt to draw a square circle.<sup>3</sup> Price, he argued, should be turned into a special-purpose tool—a precision instrument with no task other than that of motivating potential users to make the optimum use of utility services. Any re-

<sup>&</sup>lt;sup>2</sup> American Economic Review, March Sup., 1928 <sup>8</sup> Harold Hotelling, "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates," Econometrica, July, 1938, pp. 242-269.

sulting railure of the rates to yield cost-covering revenues should be made good by tax-financed subsidies; and, although Hotelling did not stress the point, any resulting excess profits should go to the public treasury. Not only would this new principle of rate making relieve the utility price system of the inconsistent task of supplying adequate revenues, but it would even further limit the role of price to that of securing the optimum utilization of existing plant capacity. Decisions on plant construction or expansion would be based on calculations which take into account increases in consumers' and producers' surplus. These calculations, Hotelling argued, might well warrant a greater expansion of capacity than would be justified on orthodox business principles. At least, so I interpret his position, with its reliance on short-run marginal costs as the measure of optimum rates except for those situations of shortage of plant capacity which dictate a resort to market-clearing prices in excess of marginal costs in the usual sense of that term.

## Failure of Hotelling to Win Widespread Support for Short-run Marginal Cost Pricing

Hotelling's address on behalf of marginal-cost pricing for railroads and for other public utilities is justly known as a landmark in the history of rate theory. But this is not because his specific proposals have won widespread support even among economists. On the contrary, only a few subsequent writers have expressed a readiness to abandon the objective of financial self-sufficiency in order to avoid any conflict between an adequate-revenue standard and a consumer-rationing standard of reasonable rates. Most of them have preferred an attempt to secure tolerable harmony between these two roles by resort, where necessary, to relatively harmless kinds of price discrimination of a value-of-the-service character. While I should doubt the general acceptance of Clemens' optimistic claim, to the effect that discrimination can accomplish the same results that could be obtained by marginalcost pricing,4 the prevailing view seems to be that the evils of taxfinanced subsidies are even greater than the evils or crudities of charges based, in part, on what the traffic will bear. This view, in which I happen to concur as a general statement, rests in large part on the conviction that the only taxes available for subsidies would themselves be of a price-distorting nature.

But even more significant for the theory of rates than this failure of marginal-cost price philosophy to win support for subsidized utility and railroad enterprise is the post-Hotelling tendency to shift from short-run marginal costs to long-run marginal costs as a norm by which to control the demand for public utility services. This tendency is

<sup>&</sup>lt;sup>4</sup> Economics and Public Utilities (New York, 1950), p. 260.

illustrated by Ralph K. Davidson's significant recent monograph entitled. "Discrimination in Gas and Electricity Pricing." as well as by the views of various English writers to whom Davidson refers with approval. It is also illustrated in the recent publications of the French rate engineers, who have actually succeeded in introducing a philosophy of long-run marginal-cost pricing into some of the electric tariffs of the nationalized electricity authority. Électricité de France.

Time does not permit a discussion of this shift from Hotelling's norm of short-run marginal-cost pricing to the much less revolutionary norm of long-run marginal cost. I must, therefore, rest content to state my opinion that some such shift is utterly essential, at least under any system of unsubsidized private or public ownership of utility enterprise. If short-run marginalism were adopted, not only the size of the gaps between average and marginal costs but also the sudden and unpredictable character of the swings from an excess in one direction to an excess in the other would spell the breakdown of rates as practical instruments of economic control. But one must admit that there are serious difficulties with the concept of long-run marginal cost as a measure either of actual rates or of minimum rates—difficulties pointed out in a highly provocative book on Marginal-cost, Marginal-output Control, by B. P. Beckwith. Indeed the seriousness of these difficulties has not yet been fully recognized in the literature on public utility rate theory. I refer particularly to the essentially arbitrary or conventional nature of all capacity-cost allocations that must convert total capital cost (such as \$200 per kilowatt) into an annual cost (such as \$20 per kilowatt year), and which must perform this conversion in a dynamic economy well in advance of the date on which the capital asset is due for retirement.

Discrimination as a Means of Bridging the Gap between the Ideal that Rates as a Whole Should Cover Costs as a Whole, and the Conflicting Ideal that Specific Rates Should Be Set at Specific Costs

The proposed shift from short-run to long-run marginal cost pricing as a general norm of consumer rationing may be expected greatly to reduce the conflict between the principle that total rates should yield revenues equal to total costs and the principle that specific services should be sold at specific costs. But, for reasons already suggested, close correspondence between these two cost-price principles would still be a highly improbable attainment, and the question arises how to secure a workable compromise. With monopolistic utilities, though perhaps not with the railroads, there is considerable room for choice between

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Baltimore, 1955.
 Columbia University Press, 1955.

an attempt to secure a fair degree of harmony by making rates proportional to long-run marginal costs even though not equal to these costs and an attempt to discriminate against types and quantities of service for which there is relatively inelastic demand. On practical grounds, much is to be said for the former choice in preference to some of the more familiar current forms of discrimination. But despite implications to the contrary in current literature on price theory, mere proportionality of rates to marginal costs, whether of a long-run or of a shortrun variety, will not avoid those distortions of the demand for different types of service that economists associate with discrimination. As my colleague, Dr. Vickrey, pointed out at these meetings two years ago,7 mere proportionality will fail to secure the optimum relative uses of closely substitute services, such as high-tension and low-tension power, and this failure must result regardless of the question whether or not the alternative services are offered by the same utility enterprise or by competing companies.

### Proposed Study of the Rationale of Modern Utility Cost Analysis

Enough has been said, I trust, in this brief paper to illustrate the force of my introductory statement that the task of reconciling the revenue-requirement role of utility rates with the consumer-rationing role presents utility price theory with its most frustrating current problem. Rightly or wrongly, prevailing opinion supports the attempt to pursue both of these objectives up to the limits of feasibility, along with still others including income-distributive objectives. But this attempt to make rates perform multiple and partly conflicting roles calls for wise compromise, and the key to wise compromise can seldom be found in any simple formula or in any simple measure of economic optima.

With the theory of rate making in its current, highly immature stage of development, what seems to me to be its most urgent present need is for closer co-operation between those academic economists—all too few in number—who take an interest in public utility problems and those practicing experts—often called rate engineers—who face the actual responsibility of designing or regulating public utility rates. Without such co-operation, economists are in danger of resting content with theories based on oversimplified assumptions not only about cost and demand functions and their measurement but also about the very objectives of rate-making policy. As a result, what they write or say is likely to command no attention, except, perhaps, from other economists.

By way of a concrete proposal for co-operation, let me suggest a thoroughgoing joint review by rate engineers and professional econo-

<sup>&#</sup>x27;AEA Papers and Proceedings, May, 1955, p. 611.

mists of the basic rationale of modern functional or fully distributed cost apportionments—the kind of apportionments based on three or more variables, such as energy costs, customer costs, and capacity costs. The reported rate cases in which these apportionments play a part, such as the famous Consolidated Edison case decided by the New York Public Service Commission in 1952, reveal widespread controversies as to the proper formulas of cost allocation, especially as to the proper allocations of capacity costs. But the study that I have in mind would not begin with an attempt to resolve these controversies. Instead, it would begin with the more fundamental question as to the significance of any method of cost apportionment which assumes, or seems to assume, that the sum of the costs of the specific classes and amounts of service supplied by a given company is equal to the total costs incurred by that company in rendering the service as a whole. To the best of my knowledge, the rate experts who have prepared and presented these cost apportionments have never faced fairly and squarely the necessity of answering this difficult question. And I think I am right in believing that this statement applies also to the analysis for the Interstate Commerce Commission with respect to such studies as those purporting to show the fully distributed costs of the railroad passenger business. A general inquiry of this nature is long overdue, but it calls for the combined efforts of persons trained in engineering technique, in modern cost accounting, and in economic analysis.

# A CRITIQUE OF PUBLIC POWER POLICIES

By Martin G. Glaeser University of Wisconsin

In introducing the discussion of public power policies, I can do little more than to send a few beams of a historical searchlight into some widely separated sectors of the power field without doing anything to illuminate the large areas of significant public power activities that lie between. Moreover, public power policies cannot be dissociated from policies relating to our water and energy resources, especially those having to do with fossil fuels. Neither can they be discussed without at least passing reference to our past regulatory policies in the social control of private enterprise. These comments must, therefore, be highly selective.

In making these critical comments, I will base myself upon the methodological approach of the late Professor John R. Commons who —as many of you know—combined the underlying assumptions of scarcity, efficiency, custom, sovereignty, and futurity in a dynamic synthesis of the capitalistic process which he called the "going concern." In this connection, I shall take it as granted that we will continue to develop the public utility institution as the outcome of a rule-making process originating in custom but developed by sovereignty. Although it was once predicted, in an article very much germane to our present discussion, by a member of this Association that the public utility concept was passing, I see no marked evidence of this predicted trend. On the contrary, if I interpret current events correctly, we may be witnessing an extension of the public utility concept to the management of the Suez Canal as an international facility under the aegis of international law.

I begin my critique of public power policies with the 1955 report of the Commission on Organization of the Executive Branch of the Government, generally known as the second Hoover Commission, and more particularly with that part of the report which deals with "Water Resources and Power." This commission report is the end result of a three-volume "task force" report representing an expenditure of one-half million dollars. It should be recalled that this comprehensive survey was preceded by others equally comprehensive. In 1952 came the report of the President's Materials Policy Commission—the so-called "Paley Commission"—and in 1950 the report of the President's Water Resources Policy Commission—the Cooke Commission.

In all of these studies the operations of federal agencies in developing the water and energy resources of the Colorado River, the Columbia River, and the Tennessee River received extended attention. These three federal examples have afforded what Max Weber would have called three "ideal types" of policy formation. Speaking generally, the Colorado exemplified the states-rights and interstate compact approach. The Columbia exhibited the old-line departmental agencies in action: the Bureau of Reclamation and the Corps of Army Engineers supplemented by some interagency co-ordination, notably the Bonneville Power Administration. The Tennessee approach was sui generis in that the Tennessee Valley Authority was a federal corporate instrumentality with a single, unified jurisdiction over the water and power resources of an entire watershed.

If I may characterize the mental attitude of the majority of the Hoover Commission-and particularly of the members of the task force—toward the TVA, it could be stated in terms of two contrasting characterizations. In 1933, when TVA was the center of much political controversy, Norman Thomas, perennial presidential candidate of the Socialist Party, called it "the only socialist flower in a capitalist garden of weeds." One cannot read the reports of the Hoover Commission, particularly the underlying reports of the task forces, without the feeling that TVA was treated as the only socialist weed in a capitalist flower garden.

The water and power policies advocated by the second Hoover Commission are embodied in fifteen recommendations. They were accepted by a majority of the commissioners in toto but with significant dissents by a minority. I will present and comment on them seriatim.

Recommendation Number 1 states a national policy in terms of nine points as follows:

a) That water resources should be developed to assure their optimum use and their maximum contribution to the national economic growth, strength and general welfare.

b) That water resources development should be generally undertaken by drainage areas locally and regionally.

c) That the Federal Government should assume responsibility when participation or initiative is necessary to further or safeguard the national interest or to accomplish broad national objectives, where projects because of size or complexity or potential multiple purposes or benefits are beyond the means or the needs of local or private enterprise. Under other circumstances, the responsibility should be discharged by state or local governments or by local organizations or by private enterprise.

Commissioner James Farley, while agreeing that there should be a national policy, objected that the role of private enterprise had been overemphasized. "In my judgment," he says, "the cumulative effect of the recommendations in this report come dangerously close to inviting an abdication by the Federal Government of its responsibilities to insure the proper development of this country's great natural resources."

Commissioner Holifield, Congressman from California, dissents from the report in its entirety and castigates the policy statement as made up of "pious but ambiguous expressions" with later recommendations in conflict with the nine points.

Almost equally strong is the dissent of such administration stalwarts as Commissioners Herbert Brownell, the Attorney General, and Arthur S. Flemming, the Director of Defense Mobilization, in thus limiting federal responsibility for leadership, "This leadership," they say, "must be dynamic. It should view problems from a long-range standpoint. It should recognize that there are no 'pat' solutions or uniform approaches to all local and national water resource problems." And again they say, "Local participation should be encouraged in Federal projects looking to local operation and eventual ownership of water projects, including an adequate return of interest on funds used and with appropriate terms of payment on reimbursable projects. However the Federal Government must assure that local projects are not inconsistent with the nation's needs as a whole."

With the exception of Commissioner Holifield, who finds little to his liking in the entire report, the following points seem to be acceptable:

d) That in participating in water resources and power development, the Federal Government without waiving its constitutional rights should take account of the rights and laws of the separate states concerning appropriation, use, control, and development of waters within their boundaries.

e) That the Federal Government should provide advisory assistance to those local and

f) That before Congress authorizes or appropriates funds for Federal participation in any water resource project, it should have substantial evidence that the project is economically justified and financially feasible, and that such project is essential to national interest.

The next two points in the so-called "statement of policy" drew the dissent of not only Commissioner Holifield but also of Commissioners Brownell and Flemming. The latter objected particularly to section g:

g) That one Federal agency should be responsible for collecting and reviewing the adequacy of hydrologic data.

h) That all Federal agencies administering revenue-producing water resource and power projects should pay all cash revenues to the Treasury as miscellaneous receipts and receive an annual appropriation for cash operating expenditures.

With respect to section g they say: "The problem in the area of hydrologic data has not been that there are a number of agencies engaged in collection, but rather that there has not been adequate staff available to make the best use of data already collected."

I come now to point nine of the policy statement which reads:

i) That regulation of rates for sale of electrical energy by all Federal agencies be vested in the Federal Power Commission.

This radical departure from past policies does not seem to have drawn the fire of any of the Commissioners except Congressman Holifield who

correctly states that it "would revolutionize price policy in government power sales."

If Congress should want the experimental price policies of TVA to be terminated, the recommended action would very likely be a quick administrative route to that goal.

Recommendation Number 2. Passing to the question of the required reorganization of federal agencies to implement the new national water policy the Commission recommended the creation of a Water Resources Board. The President had also appointed a Cabinet Committee on Water Resources in May, 1954, to look into this question of a new organization, and from their report came the suggestion of a completely new Water Resources Board, located in the Executive Office of the President. It was to consist (ex officio) of those Cabinet members "principally concerned," and of five public members to be "recruited from engineers, economists and others of recognized abilities." It would be the duty of the Board to determine the broad policies to be recommended to the President, and, with his approval, to the Congress. Into this were to be merged also the duties of the present Interagency Committee on Water Resources whose function it had been "to secure greater coordination and the resolution of conflicts." From this recommendation Brownell and Flemming dissented.

Recommendation Number 3. Because the Bureau of the Budget has final responsibilities in developing the Executive Budget, it was recommended "that the staff conducting certain of the functions of the Bureau of the Budget be strengthened by such professional staff as will enable it to perform the function of evaluation of the merits of water development projects presented to it for appropriations."

This recommendation apparently drew no dissents, even from Commissioner Holifield, who said: "I do not quarrel with the idea of careful budgetary review of water resource projects in the exercise of executive responsibility. But I must register my opposition to a board which will act as a kind of 'Czar' over national development and withdraw many policy decisions from the Congressional orbit." To this the present commentator would add a distinct Amen.

Recommendation Number 4. This concerns the amount of acreage to be held by any one farmer in a federal irrigation project, usually 160 acres, enforced through the delivery of water to the owner. The recommendation reads: "That the Congress amend present acreage limitation so as to meet local conditions..."

Associated with federal reclamation is the maintenance of revolving funds. Because Congress had departed from the original concept of a single revolving reclamation fund by creating others and because this, the task force maintained, had obscured the financing of projects

and the subsidies involved, the Commission authorized Recommendation Number 5: "That the revolving funds be abolished and all moneys payable into these funds be covered into the general fund of the Federal Treasury and all project funds be appropriated by the Congress." Brownell and Flemming said they could not support such a broad recommendation. Moreover, public opinion in western states would be hostile to the proposal. At hearings before the Subcommittee of the Government Operations Committee, set up to investigate the Hoover recommendations (called "the Jones Committee") the abolition of revolving funds was uniformly opposed in all the reclamation states.

I shall pass over hurriedly Recommendation Number 6: "That the construction of headwater dams in the fiood control program of the Soil Conservation Service be transferred to the Corps of Engineers." This proposal was volubly opposed at hearings before the Jones Committee. Brownell and Flemming dissented while Holifield drew attention to the inconsistency of the Commission in criticizing the Army Engineers and yet expanding their function into these headwater improvements.

The Commission's extensive investigation of the navigation function bore fruit in terms of two recommendations. Noncontroversial Recommendation Number 7 was "that all projects declared obsolete or unsound by the Chief of Engineers should be removed from Congressional authorizations," while highly controversial Number 8 suggested "that Congress authorize a user charge on inland waterways except for smaller pleasure craft, sufficient to cover maintenance and operation and authorize the Interstate Commerce Commission to fix such charges." Flemming and Brownell make the eminently sensible suggestion (with which I am in agreement) that the whole problem of user charges on inland waterways be handled as a matter of comprehensive national transportation policy. Commissioner Holifield called the toll proposal "premature."

What the Hoover Commission's national policy discussions were really leading up to were Recommendations 9, 10, and 11. These have to do with rate making for federal electric power, with the construction of steam plants by federal agencies, with the operation of the preference clause in favor of public and co-operative agencies, and with the federal construction of transmission lines as a means of marketing such federally produced power.

Since these represent the kernel of the nut and have been reserved for discussion by several of the discussants, I will merely introduce them at this point, together with some of my own comments.

Recommendation Number 9. That the Congress empower and direct the Federal Power Commission to fix the rates on Government power sales at such levels as will—

a) Eliminate the inequities now imposed upon the great majority of the people;

b) Amortize and pay interest on the Federal investment in power, plus an amount which will equal Federal tax exemption based upon the Federal taxes paid by the private utilities;

c) Provide payments in lieu of full taxes to the State and local government equivalent

to those the private utilities would pay.

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There in all its starkness is the suggestion of a uniform rule of rate making which would, in the opinion of the Commission, make the power projects truly self-liquidating and end the constitutional immunity from taxation of governmental agencies, both federal and state. The rule recognizes the partial concession to tax equality embodied in TVA and Boulder Dam rates.

Recommendation Number 10. That the Government or its agencies cease the building of steam plants and provide for the equation of their power loads by interconnection with the grids of neighboring power systems.

This is chiefly directed against TVA which has been authorized by Congress to develop a self-contained public power system.

Recommendation Number 11. a) That the private utilities be permitted to purchase a

fair share of Federal power.

b) That no further building of transmission lines be undertaken where such transmission. sion service can be provided by non-Federal agencies.

This suggested change would end the preference policy and stop the duplication of transmission lines. With the exception of Commissioner Holifield, whose opposition to the entire report is unflinching and comprehensive, all the commissioners were in agreement with the new rate policy except that Commissioners Brownell and Flemming would preserve the preferences designated by Congress.

This is also the place to introduce another recommendation of the Commission concerned with power policies which comes from a different source: the task force investigation of lending, guaranteeing, and insurance activities. This concerns the reorganization of the Rural Electrification Administration, with respect to which Recommendation Number 36 reads:

a) That the REA be reorganized on a self-supporting basis;

b) Secure its financing from private sources; and
 c) As reorganized, be made subject to the Government Corporation Control Act.

Again Commissioner Holifield dissented and was joined by Commissioners Brownell and Farley.

A final aspect of the Hoover Commission's critique of power policies has to do with the future development of power projects. Here its objective is, as indeed is its objective throughout the manifold subjects considered, that there be left only a so-called "minimum of competition with private enterprise." It is perhaps fair to say that the ideal in the minds of the consenting commissioners is a species of new laissez faire. This point of view appears from these final recommendations:

Recommendation Number 12. That the Columbia River Basin system, the Hoover-Parker-Davis Dams Administration, the Central Valley project of California, the Missouri River Basin project, the Southwestern Power Administration, and the Southeastern Power Administration all be incorporated under and made subject to the Government Corporation Control Act.

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Recommendation Number 13. That they and the Tennessee Valley Authority be required to secure their capital for their future improvements, when authorized by the Congress, by issuing their own securities to the public without subordinating the present Federal

investment, thus relieving the taxpayers of this burden. . . .

Recommendation Number 14. That representatives from the States concerned, as well

as Federal representatives, should be appointed to these boards.

Recommendation Number 15. In respect to the power component of new multiple-

purpose projects, we make the following recommendation:

a) That private enterprise be offered the opportunity to provide the capital for the electrical component of multiple-purpose dams and dispose of the power through their own systems (they being subject to regulation of rates by Federal and State authorities), but the management of the dams should remain in the Federal Government.

b) That if such capital be not available, the power should be offered for sale to the private utilities, the States, or the municipalities and cooperatives prior to construction, on terms that will protect the Federal interest.

With the exception of the redoubtable Holifield, all the other members of the Hoover Commission appear to favor the federal incorporation of federal projects, permitting the financing of future improvements by the issuance of their own securities and the voluntary participation of private enterprise and local public agencies in furnishing capital for the "electrical component" of multiple-purpose dams. Brownell and Flemming alone dissent from Recommendation 14 (not too important) because they think it would not be proper to let states designate members of federal corporations,

Commissioner Holifield was highly critical of the personnel of the task force because their investigations and policy proposals, he maintained, reflected "preconceived ideas and personal predilections." In his testimony before the Iones Committee he details the failure of his attempt to designate as members of the task force investigators having the viewpoint of public power. No unbiased person, I think, can deny the cogency of these representations by Commissioner Holifield. It was a"stacked" task force. Nevertheless, from the point of view of bringing this problem dragon out of his cave where his teeth and claws may be counted, the Hoover Commission's critique of our historic power policies will serve a useful purpose. It seemed to me that it was made to order for this occasion.

In the time that remains I want to state my own position, perhaps somewhat categorically, upon a few of the issues raised by the Hoover report. The Pacific Southwest in developing the Colorado River should be permitted to "muddle through" with its compact approach to the problem. The compacts are "going concerns" and long-term contractual commitments have been made upon this basis. The vested interests thus created will be too strong for any radical revisions in power policies, if, indeed, they be necessary in this instance because the Boulder Canyon Project Act embodies many of Mr. Hoover's ideas.

The Tennessee Valley Authority is also a going concern which is definitely in the wholesale power business and should be authorized to function as a public utility. (To function as a public utility implies that a public agency is operating under the proprietary rather than the sovereign power. It can and should then be made subject to federal taxation.) TVA has a definite service area, its procedures have been standardized under monopolistic conditions, and the TVA yardstick is not an exportable commodity. TVA is not a "conspiracy," as spokesmen for the private utilities are wont to imply. In fact, TVA grew up and was nurtured in the soil of ineffective regulation which characterized the predepression period, particularly in the South. The utilities have therefore no one but themselves to blame.

The Pacific Northwest, with its dependence upon Columbia River power, provides an opportunity for testing the efficacy of what may be loosely called "the partnership plan" of natural resource and power development. The significant rise of public power agencies, even before river development began, like the cities of Eugene in Oregon and Seattle and Tacoma in Washington, provide, together with the private utilities, a solid base for local participation. Subsequently, the development of Public Utility Districts and co-operatives, the setting up of the Bonneville Power Administration as a marketing agency, and the creation of the Northwest Power Pool during World War II as an integrating agency have provided a further basis for co-operation between the public and private sectors of the power and natural resource economy.

Evidence that this is no chimerical solution of a regional problem may be found in the licensing by the Federal Power Commission of the Grant County Public Utility District to construct the Priest Rapids Project on the Columbia River. To attain this end, the preference clause in the Federal Power Commission Act of 1920 was perhaps indispensable. Power from this dam is being sold to eight public agencies and four private utilities with 36½ per cent of the total output being reserved for the Grant County Public Utility District.

With respect to the other purposes of this multipurpose project, the license provides that the District must so construct the dam as to make possible the addition of a navigable lock at a future date. It also provides that the District must at its own expense provide flood control storage equivalent to the flood storage now provided by the natural constriction of the channel. The District must also provide flood control by advance release of water from its reservoirs if requested by the Corps of Engineers, though for this operation the federal government will pay compensation to make up for the lost electric energy.

Another example of the partnership policy in action is the Puget Sound Utilities Council whereby the cities of Seattle and Tacoma, the Snohomish, and Chelan public utility districts and the Puget Sound Power and Light Company are co-operating in the development of multipurpose dams in this watershed.

I do not want to close without referring, however briefly, to the proposals made by the Hoover Commission with respect to the Rural Electrification Administration. The REA can be credited, in my opinion, with a truly revolutionary accomplishment in the field of electric service. If the policies of federal tax exemption and the loan of public credit require justification, such justification can be found in the improved living and working conditions introduced by electricity in its application to agriculture. Private utilities—somewhat belatedly perhaps—have done their share of this task.

Without laboring the point, the diseconomies of low load factor and low density of saturation have always militated against the expansion of electric service into rural areas. With the policy of area coverage and the introduction of co-operative principles, this aspect of social discrimination has been in large part eliminated. The nation as a going concern is the better because this Stygian darkness has been lifted. Moreover, it has been accomplished without the grant of interest-free capital, as is the case with reclamation projects. Project loans by REA to co-operatives are both interest bearing and self-liquidating. In this respect the experience of the REA has, on the whole, been encouraging.

The exemption from federal taxation of co-operatives, which REA co-operatives share with others, rests upon its own special facts and upon historical considerations of public policy, which there is no time to consider. But the item of federal tax exemption in the costs of the distribution and power co-operatives, represents an important element in capital formation. Also important is the availability of a low-cost power supply which the preference clause (better called "the priority clause") assures. If the alternative of self-service through the medium of the co-operative movement is to be preserved in the power field, the particular recommendations of the Hoover Commission relating to REA will have to be disregarded.

#### DISCUSSION

EMERY TROXEL: I am supposed to talk about the pricing of electricity that is publicly produced in our water basins. Reducing the questions, I shall be content to say a few words on what the actual pricing patterns have and have not been. A singular economic pattern of pricing decisions or cost assignments or marginal "allocative" limits does not exist among the basins. Most of you need not be told at length that political forces are more powerful than economists' logic in these settings.

Let us observe some characteristics of the pricing behavior. First, in some basins the electricity prices were chosen prior to cost determinations. For TVA the basic prices were chosen more than four years before the first joint-cost allocation was made. Similarly, Bonneville prices were decided seven years, Grand Coulee prices (copied from Bonneville prices) about four years, and Central Valley prices a year and a half before the cost determinations. To be sure, the low comparative prices had strong political support. Yet, whatever the political explanations may be, an evident cost-price relation did not control the pricing decisions.

Electricity prices have a different history among western irrigation projects. They are chosen during the planning stages and are directed toward minimization of irrigation payments. For Boulder Dam, the first of these cases, the electricity prices were aimed roughly at a maximum amortization of the multipurpose investment. As described later, the manipulations of electric revenue became more complex for subsequent projects. But minimization of land-user repayments remained as a political objective for electric operations. In these cases the predictions of electricity demands and explanations of pricing choices usually are offhand or obscure—at least as far as my reading goes. For instance, the recent Congressional hearings and documents tell practically nothing about the 6-mill (formerly 5.5-mill) price for electricity from the Upper Colorado dams.

Next, within each project area, electricity prices have not varied commonly as additional plant units have been built. The basic TVA prices remain today; yet, in the meantime, twenty-three hydro plants and six large steam plants have been added to the system. Similarly, the original Bonneville prices in the Columbia Basin and initial prices in other areas remain in force. Someone may say that, as increasing proportions of public electricity are sold directly to industries and federal government agencies (as in TVA sales), the basic prices for public outlets are less important than they once were. Nonetheless, stable prices, including the stability of prices for industrial and government buyers, persist as a characteristic.

The stability of prices raises some economic questions about cost-price relationships. For one thing, cost differences are recognizable between different plants in a basin area. So, as additional plants are built, the project can experience increasing costs of electricity generation and/or transmission.

Some evidence of these increasing costs is available, particularly in investment costs per kilowatt of plant capacity. In consequence, a constant price through time is either too high relative to initial allocative limits or too low relative to some later limits. Electricity prices can change as increasing costs occur with additional plant units; indeed, the pattern can be a proximate form of marginal-cost pricing. Such a pattern is not considered. The public administrators do not seek any apparent relation between electricity prices and the marginal allocative limits of their systems.

Having stability, the prices do not always perform rationing functions for available electricity outputs. The rationing standard of Professor Bonbright's paper does not operate. This is evident already in the Tennessee and Columbia Basins. Sales increase at prevailing prices, shortages of electricity occur, and then the public managers use the shortages to argue for more generating plants. Thus, the public pricing policy is not directed either to a rationing purpose in short periods or to control of efficient allocative (investment) limits in longer organizational views.

Distributions of joint-investment costs are well-known characteristics of the large systems. They are a kind of political cost accounting and often are described as "equitable" allocations. The reports and decisions on the distributions summarize technical data on a project, give arithmetic details of the cost accounting, but usually contain nothing on economic analysis. Different methods are in use, as you know, but a recent proposal, which has the awkward name of "separable costs—remaining benefits," may become the standard procedure. With this new way the electricity prices must be known before electric "benefits" are determinable; i.e., the cost-price relation is reversed. All of the methods also commit the familiar economic fallacy about dividing joint-cost sums. They do not need economic logic, of course, to survive as acceptable forms of political cost accounting.

As noted already, some joint-cost distributions have been made after the pricing decisions and have not determined the prices. Sometimes, too, the electricity proportion of joint costs has been constant or near constant as additional plants were added to a system; e.g., a constant 40 per cent proportion through seven TVA cost studies and slight increases to 42 per cent by 1953. More pointedly, each such cost distribution has been based on a certain size and location of an existing plant. Variable limits of resource use—the real allocative questions of economic organization in a basin—are excluded from consideration. So, for all I can see, the cost assignments do not perform any economic function but are useful apparently in the public accounting for asset values and revenues.

Out West the repayment plans for irrigation projects contain other relations to electricity operations. Extending the Boulder pattern, reclamation men began to anticipate sizable electricity profits as partial repayments of irrigation investments. In this connection the revenue and cost predictions are extended to fifty or more years and are scarcely more than hopeful statements. Amortization tables to the dollar, but not a word about probable errors. The reclamationists went further in the mid-forties: allowed since 1902 to exclude interest costs on irrigation investments, they decided to use

the interest revenue on electric investments to repay part of the irrigation costs in some multipurpose projects. Next, they dropped these "diversions" of electric revenue, and turned to the Collbran formula that, in effect, uses electric revenue to amortize part of the separate irrigation investments after the electric investment is first amortized. The plans for the Upper Colorado project, where the electric plants are called "cash registers" by some politicians, contains a large-sized example of the formula. With these manipulations the electricity prices are higher obviously than if only electricity costs were counted. And Bonbright's standard of revenue requirements gets some special twists. In the West, then, the objective of low water prices for irrigation comes ahead of low electricity prices.

In summation, a certain pattern of cost-price relations does not control the pricing decisions. Nor are the pricing choices joined to efficient economic limits of plant formation. Apparently, then, no one bothers much with economic questions—not even such old chestnuts as average-cost pricing versus marginal-cost pricing. Meanwhile, a political attachment is fixed to old prices, and any upward changes in prices become wrong notions in the public-production rationale. In this context, the cost distributions are means of electric revenue accounting, or repayment plans divert electric revenue to other project purposes. An economic policy of efficient allocative limits does not emerge, but political means and ends acquire more and more status.

Fred P. Morrissey: Professor Bonbright has very ably presented the dilemma that faces utility rate makers. The conflicts arising out of the revenue requirement, consumer-rationing, and equity standards are indeed serious and warrant very careful study. I have found very little interest among regulatory agencies in the consumer-rationing standard, perhaps because these groups tend to be dominated by politically inclined commissioners and perhaps, also, because engineers and accountants constitute the great majority of the Commission staff members to the almost complete exclusion of economists or even of staff members with training in economics. The California Commission (as well as Wisconsin) perhaps is an exception because over the last ten years, there has been an ex-economics professor as a member of the Commission itself.

I do not hold much hope in the near future for the marginal cost approach as suggested by Hotelling. This proposal has appeared to me to be somewhat of a tour de force and as long as we continue to think in terms of a private enterprise economy—or at least in terms of commissions and courts concerned with the preservation of private property—the best one can expect is acceptance of a watered-down version where prices are merely proportional to marginal costs. Granted that short-run marginal-cost pricing would provide short-run efficiency with prices equal to incremental or marginal costs, its application presents numerous difficulties. To mention a few: Would prices so fixed by public authority be confiscatory under present law? Would not a still greater barrier be the inadequacy of current accounting practice with regard to the calculation of incremental costs? I am certain that if the accountants would put some substantial effort on this matter, procedures for

satisfactory calculation of incremental cost would quickly be advanced—but this may be too much to hope for from a tradition-dominated group.

The charm of short-run marginal cost pricing was due in part to its espousal in a time of great unemployment of resources and its resulting promise to substantially reduce utility rates. Professor Bonbright leaves unanswered the question whether long-run marginal costs would promise the same price reductions currently. Certainly great technological strides have been made in steam plant generation but these advantages may be offset by higher investment costs due to the substantial inflation if we look at dollar costs. It seems inevitable to me, however, that either type of marginal cost pricing could not escape subsidization. Despite the fact that the history of the U.S. can be written in terms of subsidization on an enormous scale (a paradox in a country claiming to be the bastion of free enterprise), it must be conclusively demonstrated that less distortion of the economy would occur from the tax-raising mechanism than results from the use of average-cost or "what-the-traffic-will-bear" pricing.

But while I hold little hope for marginal cost pricing in its formal array, I do not suggest that economists abandon research and study in that area. At the risk of being repetitious and of being accused of ultra conservatism, I think there are areas within the present institutional framework of rate making which require study and investigation. To mention only three at this time, I would refer to the importance of capital structure, dividend policy, and depreciation. Apparently without any investigation beyond the FCC study in 1938 and a superficial analysis by Ebasco services about 1950, it has become almost dogma, particularly among academic economists, that a very large proportion of the capital fund of a utility should be in fixed-charge securities—a situation which tends to militate against flexibility and rate experimentation as suggested by Professor Bonbright. Similarly with dividend policy, high payouts are praised on the assumption that investors greatly prefer cash income and discount retained earnings; yet these same common stockholders were asked to return as new equity capital (by means of subscription rights) almost 50 per cent of the cash dividends they had received in the past seven years. This practice of high pay-out tends to force stockholders unnecessarily to bear double taxation; yet regulatory commissions and expert witnesses continue to maintain that high pay-outs are beneficial by keeping the cost of equity low.

Similarly, the determination of depreciation expense under Section 167 of the 1954 Revised Tax Code requires careful attention and investigation. It appears that many utilities are seeking to avail themselves of the "liberalized" depreciation provisions, not only for accounting purposes, but also for rate-making purposes. The declared function of this tax measure was "to ensure and encourage a high level of investment"—an incentive measure which appears to be entirely irrelevant to a utility, since it bears the responsibility of adding plant and equipment as the demand requires. If utilities are unable to finance needed expansion, it appears that relief and incentive should be sought through the rate of return and commission action.

In closing, I want to approve Professor Bonbright's suggestion for co-

operative studies between utility groups and professional economists. However, I would go further with this suggestion and propose a very close and continuing relationship where microeconomic problems are concerned. Unfortunately, there appears to be a lack of rapport between these groups with both parties bearing blame. Many academic economists have had only one contact with utilities, that of opposition witness in a rate case—a contact not designed to encourage mutual understanding and co-operation. The disclosures of the relationship of electric utilities and academic institutions in the twenties and thirties are still remembered. I suspect that one of the causes of lack of interest in utility economics among graduate students is the fear that this is still a slightly contaminated area. If a concentrated attack is to be made on many of these utility problems, we must get capable and well-informed personnel working on them—and the utility industry can do its share through encouraging independent, objective study and by sponsorship of fellowships for advanced work.

James K. Hall: In viewing the public versus private power controversy, no one consideration appears to have served more to confuse and obscure public perspective thereon than the tax issues involved. The socioeconomic question, with its political implications, of the relative desirability of public ownership and operation of electric power facilities all too frequently degenerates into emotional charges and countercharges, claims and counterclaims, revolving around the comparative tax liabilities of public and private power. Proponents of public power find their allegations of lower priced power under public ownership and operation unconvincing to partisans of private power who point to the tax discrimination visited upon private enterprise in the power field. Consequently, rate comparisons between public and private power have been singularly unrewarding, apart from other causes of debate, such as full-reserve accounting for depreciation, the substitution of debt amortization for depreciation, and the like, for public power.

That tax burden discriminations exist between public and private power no one would deny; further, that these discriminations show a pronounced differential character between public and private power within many states and between and among states has been adequately documented. In addition, wide variation in tax, or tax related, liabilities, including in lieu tax payments and tax equivalents, is present among public power agencies in many jurisdictions. In illustration, the state of Washington finds itself with no less than three major public power agencies engaged in the production and/or distribution of electric power; namely, the large municipal electric systems in Seattle and Tacoma, the public utility districts of which thirty-one have been authorized, with twenty-two (the electric facilities of the Stevens County Public Utility District were purchased by the Washington Water Power Company in December, 1955) engaged in operations, and the Bonneville Administration—a federal distribution and marketing agency. An indication of the extent of tax burden variation among these public power agencies finds emphasis when it is noted that the Bonneville Administration pays no federal, state, or local taxes, or in lieu tax payments, while the Seattle municipal electric system, for example, reports a total of state, county, and city taxes, in lieu tax payments, and contributions and services to state and local governments of some \$4.027.916, or 13.8 per cent of total electric revenues, for 1955. (City of Seattle, Department of Lighting, Annual Report, 1955, page 32.) Public utility district tax payments for 1955 to the state and local governments ranged from a low of 3.5 per cent for the Grays Harbor District to a high of 7.6 per cent of electric revenues for the Franklin District. (R. L. Pollock, "The Taxation of Public Utility Districts in the State of Washington," page 114, unpublished thesis, University of Washington, 1956.) These percentages do not include in lieu tax payments and contributions and services to local governments, the amounts of which, however, are believed to be relatively small. In contrast with the public power agencies, the estimated federal, state, and local taxes, as a percentage of electric revenues within the state, for the three major private electric utilities, the Puget Sound Power and Light Company, the Washington Water Power Company, and the Pacific Power and Light Company for 1955 were 25.5 per cent, 14.9 per cent, and 17.3 per cent, respectively (ibid., page 116). The importance of public power in Washington is substantial in that it accounts for an estimated 70.4 per cent of total kilowatt-hour sales of electric energy to ultimate consumers, exclusive of sales of federal agencies, in 1954 (*ibid.*, page 218). This total is divided into approximately equal proportions between the municipal power agencies and the public utility districts (ibid.). Sales of power by electric co-operatives are comparatively nominal, with 1 per cent of total sales to ultimate consumers (ibid.).

An issue of no small importance in the public versus private power controversy is whether or not contributions and services to government by public power agencies should be regarded as tax equivalents. Further, public power proponents on occasion insist that the net income of publicly-owned enterprises is a tax equivalent in that its destination is an increase in the public equity in power facilities and/or that it serves as a basis for rate reduction. A defensible position with respect to contributions and services to government by a publicly-owned utility requires their careful evaluation before acceptance as a tax equivalent. (On occasion this is overlooked, with the result that operating expense is understated and the aggregate of taxes, in lieu tax payments and tax equivalents is overstated in amount.) For example, in the Annual Report of the Department of Lighting of the City of Seattle for 1955, contributions and services to the city are listed in the amount of \$984,596, or 3.3 per cent of operating revenues. Included in these contributions and services are payments to the General Fund and payment of salaries of employees in the Treasurer's office. These items appear to be more appropriately classified as an operating expense to the utility primarily for labor services of employees in other departments of the city and should not be confused with taxes or tax equivalents. The largest item reported is a contribution in lieu of the social security tax. This payment is self-imposed by the city and its Lighting Department; it constitutes a voluntary labor

cost which perhaps equally well could take the form of higher salaries and wages. As a self-determined accrual, payable to itself as a city government and subject to change on its own volition, it bears little resemblance to a tax as customarily understood. It is an operating expense which arises out of a self-imposed employee retirement program. Possibly there is some justification for its inclusion as an in lieu tax payment, although the case is by no means clear. The remaining items are the excess, as estimated, above the Department's computed cost, of electric service supplied to the other departments of the city and for street lighting. Apart from having regard for the niceties of city interdepartmental accounting, such free, or partially compensated, electric service constitutes a gift, whether or not justified, to the community as a whole at the expense of consumers of electric service. In a general sense, disregarding city departmental boundary lines, it represents kilowatthours self-consumed as, in a more particular sense, is the electric energy used in the operation of the Lighting Department itself. It is not certain that payment for such services would require increased taxation or that the free service means lower taxation. This is distinctly problematical. In any case, to catalogue the arbitrarily assigned value of this free electric service as an in lieu tax payment, or tax equivalent, creates difficulty apart from determining the proper cost of such service; we cannot be sure that it is in lieu of additional taxation because other means are available to cover such costs. On the other hand, if we regard the electric operation of a municipality as an entity in itself, and on the assumption that resort to taxation would occur to cover such costs, if payment were required, a case can be made for inclusion of these free services as a tax equivalent.

To characterize the net income of a public power enterprise as a tax equivalent, however, clearly violates our basic conception of a tax. The fact that the net income is used to increase the community's equity in the electric system, by debt retirement and/or additions and betterments to plant, carries with it no necessary implication that these profits are a substitute for taxation. The net income arises as an expression of a voluntary, discretionary judgment as to the appropriate level of rates by the governing body of the utility. There is no compelling reason why a public power system should be debt free. It does not follow that taxation would be used to accomplish this result, if net income were not accrued. The accrual of net income does suggest, however, that present consumers of utility service are paying more than the current cost of the service, provided an adequate allowance is being made for depreciation. The reported net income of public power operations should be designated not as a tax equivalent but as a "capital contribution or gift toward the reduction of electric costs to succeeding generations of rate pavers."

Apart from the problem of determining what properly are tax equivalents, and to a lesser extent payments in lieu of taxes, to the end of attempting to measure aggregate tax burdens of public versus private power, we confront the basic issue of whether the public enterprises should be taxed in a manner and in amounts equivalent to the private enterprises. On this question sharp

differences of opinion exist, which are sufficiently hardened as not to permit probably any common agreement in the foreseeable future. Thus the controversy between public and private power on this basic tax issue may be expected to continue.

From the point of view of tax policy as expressed in equitable burden distribution among members of the public in local areas, in states, and for the country as a whole, a strong case may be made for tax uniformity between public and private power enterprises. This uniformity could be achieved by taxing these enterprises under the laws of each state in the same manner, regardless of ownership. Payments in lieu of the federal corporate net income tax, calculated annually in accordance with the appropriate rate schedule, could be made to the federal Treasury. The aggregate burden of federal, state, and local taxes is heavy. To the extent that public power enterprises obtain tax discriminations favorable in character and substantial in amount, they serve as instruments distorting the distribution of tax burdens, with the result that some members of the public pay less in taxes at the expense of others who are compelled to pay more. This maldistribution of burden occurs in the local areas, within the state, and within the nation and is no longer of insignificant proportions. This tax discrimination operates toward malallocation of scarce economic resources in a way not dissimilar to the tax discrimination of percentage depletion for the extractive industries in the Internal Revenue Code. The revenue bonds of local public power agencies provide tax-exempt income to their owners, which results in more or less interest saving on borrowed funds and serves to encourage public power expansion of facilities beyond the level that would occur if capital costs were on a level of comparability with private power. With the public power agencies in operating status, further tax savings result because of their freedom from the federal corporate tax and some advantage, possibly, in state and local taxation. These tax savings may be used to effect some reduction in rates, as well as to provide a net income which gives rise to a demand for labor and capital for plant expansion. Consequently, we confront, in degree, a tax-subsidized expansion of the publicly-owned segment of the power industry, as well as a tax-subsidized power cost to the local consumers of public power. This tax subsidization has significant implications with reference to the economies of fuller utilization of plant and of scale, with the latter suggesting the importance of resource maldistribution over time.

Further implications of the failure to achieve a more equitable distribution of burden among taxpayers are to be found in the geographic redistribution of income, in the alteration of consumer preference schedules, in more or less distortion of public expenditure programs, and in the malproportioning of the national income between public and private expenditures. Not of least importance is the consequence to the public of the costly flow of propaganda, with its abuse of truth, its incitement to prejudice, and its obscuration of objectivity in the appraisal of appropriate tax and ownership policy. Public and private power have been equally guilty in this respect.

As we know, the principle which would serve best the economic welfare of

the public is that public or private ownership and operation of power facilities, serving only as means to an end, not as ends in themselves, should find selection solely on the basis of which form of ownership, at a given time and place, can most efficiently and economically provide power service. A meaningful contribution to the effective application of this principle may be made by establishing parity of taxation between public and private power.

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E. W. Morehouse: Because of the critical flavor of some of Glaeser's comments in the first two-thirds of his paper, my first comment is that, to give a more favorable setting for the undoubtedly political implications of many of the Hoover Commission recommendations and Glaeser's comments thereon, he might well have sketched more of the background of the water resource and power development problem and growth prospects than he did. On this same basis and his reference to a reversal of Norman Thomas' political quip, I got the impression he might have retitled his paper, "A Critique of a Critique of Public Power Policies." Later he somewhat modified this appraisal of the Commission's report, at least, although not of the task force, in which he joined Congressman Holifield in calling the task force "stacked" in favor of "private utilities."

Nevertheless, let me try such a background sketch, through my spectacles, as tersely as I can, and therefore inadequately, to give a foundation for some of my own later comments.

In this country we have developed the most ample electric power supply in the world, and I believe also it is one of the cheapest, if not the cheapest, supplies of electric power and energy in the world. As a result, in this country is found a per capita use of electric energy that is near the highest, if not the highest, of any country in the world. The industry has been a foundation stone for an industrialized economy with the highest productivity and with the highest wage levels, per capita incomes, and material standard of living in the world. It has also contributed heavily to economic growth and is today in a stage of accelerated growth as are our water supply requirements. (Commission noted an increase in water supply requirements of 145 per cent by 1975.) These attainments have been brought about primarily through an evolutionary development of the public utility concept as a regulated monopoly, in legal form, whereby the large capital funds needed to supply electric service have been mobilized chiefly from private investors with operation by quasi-public utility companies under regulation by government, now at federal, state, and local levels. In terms of ownership, the power industry has developed gradually under a mixed ownership policy, with power supply agencies owned chiefly by private investors and secondarily by governments or users (co-operatives). All of this development pattern constitutes a good illustration of evolutionary institutional development, in terms of the social theory of private property, on a practical, down-to-earth, case-by-case method, all in the Ely-Commons analytical pattern, which Glaeser notes as the basis of his approach.

The Rooseveltian political revolution of the thirties sparked in motion

developments which altered the ownership mix and the center of gravity in governmental development of water resources and power. Government and co-operative ownership were aggressively pushed, especially by the federal government, so that today the investor-owned portion of the industry has been whittled down to about 80 per cent. With the break-up of holding company systems into integrated local organizations under the Public Utility Holding Company Act of 1935, federal taxpayer-financed agencies in the aggregate now constitute the largest single power supply instrumentality in this country. It should be well known to this group how this change in ownership pattern has been brought about by various means high lighted by (1) larger expenditures of tax-raised funds for water-resource, multipurpose, river-basin or watershed development projects, (2) latterly similar large expenditures of tax-raised funds for steam generating plants in areas, like TVA, where hydroelectric resources became insufficient for area public utility responsibilities which were asserted and acquired, and (3) a marketing policy for federal power aggressively using (a) the so-called "preference clause," (b) aggressive transmission line building (sometimes in direct competition), and (c) cost accounting and rate-making practices (such as TVA rates, about which more later) resulting in federal power sales at largely tax-free and interest-free prices to now about 20 per cent of the power users in the country. Utility managements in close contact with the financial community are aware how regulatory and governmental developments affect the investment climate. In the face of such developments, many utility managements—particularly in areas where federal encroachment was immediately felt—and especially those managements with a keen feeling of their stewardship for their investors and a recognition of the need for keeping new capital markets favorable for raising the large amounts needed to finance growth, have wondered when or where this trend would lead or stop.

These are the developments in federal government activity, in both water resources and electric power, which the second Hoover Commission was charged by Congress with exploring "to promote economy, efficiency, and improved service" by various of seven methods outlined in a declaration of policy in Section 1. Number 5 of those methods reads by "eliminating non-essential services, functions, and activities which are competitive with private enterprise." The proposed powers of the Commission embraced "constitutional amendments, legislative enactments, and administrative actions" to carry out its recommendations. These aspects of the Commission's mandate from Congress deserve mention because they are not specifically referred to in Glaeser's paper.

The Hoover Commission recommendations, if implemented in legislation and administrative application (and I am well aware of the storm of political emotion and controversy this will bring forth), were definitely in the direction of putting barriers or breaks on this federalization trend. This result, in my view, would be constructive in removing a potential barrier to growth in the investor-owned segment of the industry as well as in removing inequities in the treatment of federal and nonfederal power users. Whether one agrees

with all the Commission or task force recommendations or not—and I do not agree with all of them—this result is constructive. For example, the Commission recommendation to require all federal agency revenues to go into the Treasury and all expenses be met from appropriations seems a very cumbersome way of controlling expenditures on government operations which, as long as we have them, should be on as businesslike basis as possible. Appropriate ground-rules for such operations should be established to control expenditures without resorting to such cumbersome governmental procedures. Also some of the Commission recommendations affecting TVA I will comment upon later. I submit, however, that putting brakes on this federalization trend will serve a more "useful purpose" than merely bringing a "problem dragon out of its cave," as Glaeser says.

I come now to a few specific comments on Glaeser's paper and on what I regard as the three most important issues as to electric power affected by the Hoover Commission recommendations: federal agency rate-making rules and regulation, the preference clause, and federal marketing policy.

1. Glaeser opposes Federal Power Commission regulation of federal agency rates and the proposed rate-making rule (Commission Recommendation Number 9), and restrictions on federal building of steam plants. His position reflects his partiality for TVA and his view that TVA has achieved utility status and should be permitted to function as such, without change, except as to TVA self-financing powers. He also deplores disturbing the "experimental" rates of TVA and he states TVA has a "definite service area."

As to definiteness of service area, I have not yet seen an official acceptance of a delimitation of TVA's service area. In view of the preference policies embedded in the TVA Act, the use of such provisions by TVA and elsewhere in connection with building transmission lines to serve preferred customers and to promote federal government plant expansion, and the proposals to permit TVA issues of revenue bonds to finance expansion, I feel legislative delimitation of TVA's service area, as well as modification of preference policies and independent review of financing and plant expansion, should accompany any financing power.

As to disturbing the "experimental" TVA rates, consumers of TVA power have enjoyed these rates for two decades. The rate levels have demonstrated that residential kilowatt-hour usage can be increased to about twice the national average, aided largely by actively promoted electric space-heating and air cooling installations at 4 mills and 7 to 7.5 mills per kilowatt-hour and a favorable degree-day zone in its service area. Bear in mind that TVA has become a predominantly steam-electric system (73 per cent of total system input in fiscal year 1956) and steam production expenses alone are running around 2.2 mills per kilowatt-hour, with over 50 per cent of power supplied to federal agencies at 4.09 mills. Such heating loads, I understand, are now at about a 12 per cent saturation level. Such rates have facilitated TVA's acquiring a service area for which it now asserts full public utility responsibility. These rates do not include full tax or interest or return components (nor do rates of other federal agencies) comparable to those

included in the rates of the 80 per cent of nonfederal power users in the rest of the country. A regulatory commission administering an antidiscrimination statute would, I believe, look askance at this inequitable discrimination against nonfederal power users whose tax payments help to give these benefits to federal power users. That apparently is what Glaeser fears. I ask what national benefits, as compared with area benefit to TVA or other federal power users, are realized by continuing such "experimental rates" on the same basis as in the past two decades? When does the "experiment" end?

To remove the inequity to nonfederal power users, I submit that the Federal Power Commission (FPC) should have jurisdiction over TVA and all federal agency rates, accompanied by a legislative ground-rule establishing fair, nondiscriminatory rate-making standards and cost accounting for this purpose. Especially where a federal agency claims public utility status. I see no justification for not regulating its rates on a comparable basis and with similar cost components as nonfederal power users' rates are regulated. Without such ground-rules for rate making, costs, and also cost allocations, such partial FPC review or control as now exists has been admittedly nominal and ineffective. What is the justification for an unregulated federal power monopoly? The so-called "constitutional" immunity from taxation of governmental units, which Glaeser mentions, should not be a barrier. Other constitutional barriers have been breached by federal power agencies when it suited their purposes. So I say, if the TVA asserts public utility status for a definite service area, it should, under regulation, be made to behave like other public utilities.

Incidentally, on this matter of regulating federal enterprises, I am surprised that Glaeser opposes the Hoover Commission's recommendation to establish an over-all co-ordinating and reviewing Water Resources Board. Glaeser, of all people in the academic world, should be well aware of the welter of inconsistent policies and practices and of the overlapping and jurisdictional disputes among the many federal agencies having something to do with water resource and power developments. To me, it is a prime necessity for the prudent handling of taxpayers' funds to establish such an agency to try to bring consistency and order out of chaos in this area of federal expenditures.

2. As to the preference policy (or priority clause, as Glaeser calls it), it is not clear which of the several varieties of such clauses Glaeser favors retaining. (Reclamation Act of 1906 or 1939, TVA variety, Bonneville variety, Flood Control Act of 1944, Ickes Interior Department Memorandum of 1946, or McKay Memorandum of 1953?) Glaeser says: "Also important is the availability of a low-cost power supply which the preference clause, better called the priority clause, assures." Apart from his misnaming "low-cost" a power supply which is really "underpriced" because of omitted or understated cost-components discriminating against the 80 per cent of power users who do not use federal power, as so clearly pointed out by Professor Hall, and used to accelerate growth of government ownership, how far would Glaeser carry "priority"? This needs clarification by him along with his concept of appropriate federal marketing policy.

3. Federal marketing policies in association with transmission line build policies and broadly interpreted preference policies have been used to to promote expansion of federal power supply areas and to then claim pul utility area power responsibilities or public utility status. Glaeser is not cl how far he would go on these aspects of the problem. If he favors the Ic policy in these respects, then I believe there might well be invoked task force principle: "The Federal Government does not owe a responsibite any community, section or region to supply its power requirements." I should apply not only to transmission line building but also to the build of new federal steam plants in areas where a federal agency does not related the power recognized full area power supply responsibility as a regulated pul utility.

Time does not permit commenting on some aspects of REA policies, p ticularly generating and transmission co-ops, that Glaeser omits from c sideration. Last year, Walton Seymour gave a paper vigorously urging scrapping of the "partnership policy" and a return to the previous policy 100 per cent federal monopoly in development of water resources and povincluding far-reaching preference clauses and an aggressive federal market and transmission line building policy, developing river basins as an integra unit. He included in the scope of desirable federal activity not only initiati planning, and designing of projects but construction, operation, and market of the power or water output of these projects. Glaeser in discussing S mour's paper said he was in thorough agreement with Seymour's recommen tion. This year Glaeser now sees perhaps some room or justification partnership projects. Is this a little progress?

Here are enough issues for many hours of discussion, most of it, I sorry to say, probably based more on political considerations or emotithan on economic considerations or analysis.

May I close by saving: The investor-owned portion of the electric util industry, by spending an average of 2.5 billion dollars a year over the l decade and by projecting an additional capacity of 110 million kilowa over the next decade involving expenditures, including related transmissi distribution and general facilities, of an average of 4 billion a year and ris to 5 billion by 1966, has demonstrated its financial ability and willingn to do its full share in expanding our already ample power supplies in s with the accelerated growth of power requirements. This, of course, is subj to the industry having a favorable climate in terms of minimum governm competition and federal expansionist aggression and reasonable regulate requirements so as to nourish this growth on the minimum cost basis pr ticably attainable with developing capital and other market conditions so t we may fully and adequately meet all the power needs or requirements our customers. The Hoover Commission recommendations, taken as a who when implemented in legislation and administration, should help reach th goals.

# TRANSPORTATION PROBLEMS

# INVESTMENT IN THE RAILROAD AND OTHER TRANSPORTATION INDUSTRIES UNDER REGULATION

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#### I. Introduction

The impact of institutional arrangements on the development and structure of the industries that make up the field of transportation and the reciprocal impact of technological development on those institutional arrangements make the discussion of national policies in transportation a particularly appropriate subject for the theme of this meeting of the American Economic Association. The mixture of private and public investment and the commercial and noncommercial aspects of modern transport present a challenging topic for economic analysis, especially in these days of conflicting ideologies and hesitant or uncertain public policies on the role of private enterprise and competition in the directing of economic activity.

The two most critical economic questions that have arisen from the newer developments in transportation are: (1) What should the total investment in transportation be? (2) How should it be divided among the various modes of transport? These are but familiar aspects of the age-old economic problem of allocation of resources.

Resolution of the investment problem posed by these questions must begin with the basic conditions with which national transportation policy must reckon. The magnitude of the issues involved and the multitude of questions that arise in connection with them make such an approach a formidable task. In this presentation it is impossible to develop even the most significant points at all adequately. However, it is possible to present a point of view on what the major issues are and an opinion on appropriate public action regarding them. If this presentation seems to be somewhat dogmatic, I offer limitations of time and the desire to provoke vigorous debate as the reasons therefore. If I succeed in stimulating discussion, the fact that I may have few friends left among the agencies of transport or regulatory authorities may at least have its compensation.

# II. The Cabinet Committee Report

Recognition of the need for a thoroughgoing examination of the national transportation problem in its postwar setting led President

Eisenhower to appoint a Cabinet Committee in July, 1954, to make a comprehensive review of over-all federal transportation policies and problems and transmit recommendations regarding them. Whatever may have been the hopes for a comprehensive and authoritative document, they were rudely shattered by the report which finally saw the light of day in April, 1955.

The Committee directed its attention to those federal policies which appeared to be most urgently in need of revision if transport was to maintain itself at maximum effectiveness. The report concluded that two broad major areas of federal policy required prompt revision. It therefore recommended that federal policies should be amended: (1) to permit greater reliance on competitive forces in transportation pricing and (2) to assure the maintenance of a modernized and financially strong system of common carrier transportation.

Starting with the premise that transportation today is characterized by pervasive competition, the Committee recommended that regulation of common carriers should be relaxed to give recognition to this. Conversely, more restrictions should be applied to contract carriers and the scope of regulation should be extended so as to narrow the field of the private carrier and eliminate the nonregulated carrier for hire.

The Committee stated that the report did not "propose any change in existing regulatory authority over the entrance of new enterprises in the field of public transportation, nor . . . any change in federal organization for the administration of transportation functions and responsibilities." Whether this meant that the Committee felt that all the aspects of the transportation problem comprehended by these statements were in no need of examination or revision may be a matter of conjecture. Perhaps it felt that they were irrelevant to current issues. Whatever the case, the report is completely silent on most of the questions that are pertinent to this paper.

Unless the transport problem is viewed as a whole, in light of the economic and technical structures of the various industries that comprise it and in light of the basic economic problem of allocation of resources, no answer can be given to the topic assigned to or appropriated by this paper. This is illustrated by the contradiction that seems to emerge from current regulation. Restrictions on rate advances and profits are alleged to impose limitations on investment because of the inability of the restricted carrier to attract capital. On the other hand, complaints concerning the loss of traffic by one mode to another because of rate restriction raise questions as to the efficacy of general rate increases for those carriers already feeling the stress of competition from other modes. The resolution of the contradiction, if such it be, requires an examination of transport policy as a whole.

### III. The Changing Role of the Different Agencies

The radical changes that have taken place in transport in the United States in this century may conveniently be dated from 1920, the year in which the pattern of today's regulation was given its most precise formulation. This is also the period that has witnessed phenomenal growth of the economy. As might be expected, transportation has experienced phenomenal growth, too, and all the various agencies have participated in it. An examination of the statistics depicting this, however, shows very disparate effects and raises the question whether the policies we have followed and are following have resulted in a transport system that meets reasonable tests of economic efficiency. Space does not permit a detailed chronicle of the change in status of the various agencies in recent years. A summary statement must suffice.

The total volume of intercity freight traffic has doubled since the pre-World War II peak of 1929 and more than doubled since 1920. All of the agencies have experienced growth in traffic during this period, but the railroads have had the smallest relative growth of all and only a slightly larger absolute growth than inland waterways. The total volume of intercity freight traffic in 1954 was 1,124 billion ton-miles as against 500 billion in 1920 and 575 billion in 1929. Railroad freight traffic in 1920 was 414 billion ton-miles, 450 billion in 1929, and 556 billion in 1954, an increase of only 106 billion since 1929. In contrast, intercity freight traffic by motor vehicle increased from 19 billion ton-miles in 1929 to 214 billion in 1954. Oil pipeline ton-mileage increased from 33 billion to 179 billion during the same period. Natural gas pipeline movements cannot be included in these figures, but they should be recognized when evaluations of traffic shifts—and the reasons for them—are being made.

Changes in the relative position of the various agencies are shown in the percentage distribution of freight traffic. In 1920 the railroads hauled 84 per cent of the intercity ton-mileage, inland waterways 15 per cent, and motor vehicles less than 1 per cent. By 1954 the respective figures were: railroads 49.5 per cent, inland waterways 15.4 per cent, motor vehicles 19.1 per cent, and pipelines 15.9 per cent. Motor vehicles had also become the second largest haulers of freight with 38.5 per cent of railroad tonnage.

The major shift depicted by the foregoing figures in the pattern of traffic among the various modes of transport took place between 1920 and 1940. Developments since World War II have merely served to emphasize the trends already thoroughly established. In other words, this country has been experiencing a fundamental change in its transport structure for the last thirty-five years.

A further point emphasized by freight traffic statistics is that the impact of the change on the relative position of the railroads has not been evenly distributed among the various regions. The areas that have suffered most severely are those in which the motor carriers especially have made their largest relative gains. This has been in the New England, Middle Atlantic, Central, and Southern regions. These have also been affected by pipeline transport of fuel. What the St. Lawrence waterway will do to part of this area remains to be seen. It is clear, however, that the railroads in these regions have been caught by the full force of technological change and public investment.

The changing pattern of traffic is more pronounced in the field of passenger movement than in freight. The total volume of intercity passenger traffic, both public and private, was approximately 65 billion passenger-miles in 1920. It is estimated that 89 per cent of this was by public carriers of which the railroads moved about 57 billion passengermiles or 85 per cent of the total. By 1954 the grand total had increased nearly tenfold to 625 billion passenger-miles, but the railroad share had dropped to 29.5 billion, or 4.7 per cent, while the automobile had risen to 548.7 billion or 87.8 per cent of the total. Buses accounted for 4.5 per cent and airplanes 3.13 per cent. Here, again, it is the automotive vehicle that has brought about the major change in the pattern of traffic movement. The striking thing is the overwhelming position of the private automobile in intercity passenger transport, but the bus has made the greatest inroads on passenger traffic for hire, with airplanes making rapid gains in postwar years. The railroads seem to have been caught in a squeeze play between the buses for relatively short hauls and the airplane for long-distance traffic.

Revenue statistics provide even more startling evidence of the rise of the motor carrier and the relative decline of railroads. Motor carriers of property subject to the jurisdiction of the Interstate Commerce Commission received approximately 50 per cent of the total operating revenues of the railroads in 1954. The revenue figures do not include the revenues of motor carriers for hire engaged in purely intrastate commerce. Available data indicate that motor freight carriers subject to the jurisdiction of the ICC are providing about one-eighth of the freight ton-mileage of the railroads while receiving nearly half of the operating revenues of them. What the total for-hire revenue of all intercity motor carriage amounts to is not known but these carriers supply only about 20 per cent of the freight ton-mileage. Surely this distribution of traffic and revenue must have some bearing on the question of allowing the railroad to compete more freely on a price basis with motor carriers.

Another point of significance in the changing structure of transport is the decline in the position of the common carrier. This is primarily the result of contract and private carriage of freight and of private carriage of passengers by motor vehicle. The principal impact of this is on the railroad, which is the only mode that is completely a common carrier. The effects, however, are also severe on motor transport, where the private carrier is more important in volume of traffic moved than the common carrier. Present trends seem to indicate continued rise in importance of non-common carrier traffic as well as traffic which is not transported for hire.

The role of the common carrier has undergone such a marked change since 1920 as to suggest the need for examination of the concept and responsibilities of the common carrier in the light of contemporary conditions. Our present thinking on this matter is so strongly influenced by regulations which developed with the growth of railroad transportation prior to 1920 as to raise doubts of the current validity of these regulations on the comprehensive scale that now exists. Certainly, the exhortations to protect the common carrier by limiting competition by others seem to be about as realistic as suggestions for protecting public transport in urban areas by restricting the use of private automobiles.

# \ IV. Investment in Transport

The economic problem of investment in transportation is in principle the same as in any other line of endeavor. The resemblance, however, quickly becomes blurred by complications that do not exist in comparable profusion anywhere else in the industrial structure. Railroad and pipeline facilities are supplied by private investment; most of the investment in highways, waterways, airways, and airports comes from public funds, while the equipment which uses these facilities is privately supplied. In the case of the highways, in particular, use is for both commercial and noncommercial purposes. What we have, therefore, is a mixed or hybrid system of use and ownership, with the result that many of the economic gauges for the allocation and utilization of resources are of limited assistance in much of the field of transport. Yet the total investment and the total annual expenditure for transportation in the United States are of such magnitude as to make the need for some usable measuring rods extremely urgent.

The primary investment problem in transport facilities in this country at the present time concerns rail and motor transport. The primary private investment problem concerns the railroads, for they alone in the present transport structure rely completely on private investment to supply their capital needs. It cannot be examined in isolation, however, because of the effects of regulatory and public investment policies on interagency distribution of traffic.

The story of investment in railroads since 1920 can scarcely be described as one which ordinarily characterizes a growing industry. The total net investment in the railroads of the country at the present time is about 24 billion dollars. This figure has shown only a slight increase over the past thirty-five years. Almost no net new investment has been made, nor has the investment figure been increased even by the enhanced prices that have been paid for the new equipment. This is in spite of the relatively rapid modernization program that has taken place. When one appraises the total performance of the railroads against the capital investment made to achieve that performance, allegations of inefficiency and lack of endeavor fail to stand up.

A parallel picture of lack of growth is presented by net railway operating income and gross capital expenditures. The net railway operating income was 1.121 million dollars in 1925 and 1.128 million in 1955. The fair return was 5.07 per cent in 1925 and 4.2 per cent in 1955, including tax deferrals. The average fair return for 1926-30 was 4.76 per cent and for 1946-55 it was 3.74 per cent. Gross capital expenditures amounted to 557 million dollars in 1921, 1,059 million in 1923, and 873 million in 1930. The 1921 figure was not reached again until 1944 when 560 million dollars were spent and the 1923 record was not broken until 1948 when 1,273 million were spent. This pace was maintained through 1953 but it fell off to 820 million in 1954. It was 908 million in 1955, only slightly over 3 per cent above that of 1930. What the immediate future holds is difficult to say but the signs are ominous. Gross capital expenditures from 1954 to 1960 might well average no more than they did during the period of the twenties despite the higher price level and the more urgent demands for modernization.

The total gross capital expenditures for the ten years from 1946 to 1955, inclusive, amounted to approximately 10,800 million dollars. Mr. John W. Barriger, of the Pittsburgh & Lake Erie Railroad, estimates that a complete modernization program commencing in 1956 and ending in 1963 would cost 20 billion. The magnitude of the task of achieving this becomes obvious when one realizes that this is twice the expenditures of the last ten years and that so many other aspects of the railroad picture are unfavorable at present.

Another aspect of this investment problem needs to be pointed out here, too. Mr. Barriger estimates that 10 billion dollars of the funds can be raised from internal sources, leaving 10 billion to be obtained from the sale of securities; namely, 6 billion from equipment trust certificates, 3 billion from bonds, and 1 billion from stocks. This proposed financial plan raises two important questions. First of all, stock issues since 1931 have amounted to just under 15 million dollars for all purposes, new and refunding. Can 1 billion of new stocks be sold

in the next seven years under existing railroad prospects even with the market buoyancy of a "new era of prosperity"? Even if this could be done, another serious question would arise. The total funded debt of Class I steam railroads in 1932 was approximately 11 billion dollars. By 1946, it had been reduced to 8,335 million. Since then it has risen to 9,275 million in 1954. In fact, the railroad debt position has shown no improvement since 1943. Financing under Mr. Barriger's plan would put the financial structure of the railroads right back where it was in 1929. This cannot be regarded with optimism in light of the record on traffic and fair return.

It is not possible at the present time to secure data for automotive transport that is comparable to that which is obtainable for railroads. Over-all comprehensive records are not kept, nor is depreciation or obsolescence recorded for a good deal of the facilities. Highways are used for noncommercial purposes as well as for commercial ones. Service stations, repair garages, parking lots and garages, city streets, warehouses, and so forth are the automotive counterpart of railroad terminals, repair shops, fueling centers, and so on. Investment data for intercity traffic facilities only cannot be obtained even with reasonable accuracy, because of the terminal services provided by city streets. freeways, and loading and unloading facilities. The terminal services have become such an important factor in the motor transport problem that out of the estimated total of 50 billion dollars to be spent over the next fifteen years as a result of the legislation passed at the last session of Congress, 37.3 billion will be spent on city freeways, on superhighways between cities, and on state highways. Of this amount 15 billion dollars is to go to city freeways and belt-routes. Obviously, a significant part of the federal highway program is concerned with metropolitan transportation. This is unavoidable in view of the terminal services which the street and freeway systems of urban centers offer to intercity highway traffic.

The bulk of the investment in all roads and streets of the United States has taken place since 1920. Mr. Farrel, of the Bureau of Public Roads, has estimated that 75.5 billion dollars at prices as of January 1, 1953, were invested in these facilities up to that time, over 11 billion of this since 1920. He estimated that the net depreciated investment was 36.9 billion. On this basis the present figure would be something over 40 billion. The net depreciated investment in motor vehicles is probably well over 120 billion dollars, which gives a total of probably over 160 billion for roads and rolling stock.

Mr. Charles D. Curtis, of the Bureau of Public Roads, recently stated that it will take five years to reach a peak in highway spending. At the peak, the total annual expenditure for construction and main-

tenance of highways will be 12 billion dollars and the total expenditure for the next thirteen years will be about 70 billion. Studies that developed the 101 billion national highway program showed that during the next thirty years we would need 297 billion dollars for our highway programs for construction and maintenance. To add to this array of figures, I might mention that the Chase-Manhattan Bank calculated that the cost of owning and operating all the cars, trucks, and buses in the nation was 50 billion dollars a year as of 1955.

What all these figures for railroad and motor vehicle transport really mean I do not know, but total investment in transport facilities in the United States has obviously reached staggering proportions. I do not know what the total volume of traffic for the United States should be. I do not know in what proportions the total investment should be divided among the various agencies. I do know, however, that nobody else has any reasonable answers to these questions at the present time; that we are sadly lacking in agreement upon a rational means for ascertaining what constitutes an adequate and economical transport system; that current regulatory policy is making literally no contribution towards a solution of the problems; and that public aid and promotional policies can escape waste and overexpansion only by the most fortuitous circumstances and good luck.

Regulatory legislation and policies that do not recognize the radical differences in the structures and problems of the various agencies, as well as the unavoidable impact of competition, cannot make constructive contributions to the investment problem. Public aid and promotional policies that largely ignore the economic gauges of need and do not indicate an awareness of the interagency effects of those policies can scarcely have anything but serious consequences, especially when such a large portion of national wealth, income, and investment is involved.

Any appraisal of the total investment requirements of transport and an economical division of that total must take both regulatory and public aid policies into consideration. Private investment, for example, cannot survive if public aid weights the scales too heavily on the other side. Nevertheless, the two aspects of the problem must be distinguished carefully. In appraising the effects of regulation, public aid may be taken as datum. To achieve objectives such as those contained in the declaration of national policy, regulation will have to follow the same economic principles today when public aid is distributed unevenly as it would if public aid were nonexistent. Whether highway carriers are receiving public aid and if so, how much, are not questions that should concern the ICC in its regulatory capacity. Intermode rate relationships, certification, and so forth, are questions to be de-

cided on the basis of the economic structures of the industries, costs, and the economical basis of pricing under organizational arrangements currently in existence.

The effects of regulation on investment in railroads over the last thirty years is not easy to appraise. Certainly, the rate of return has been too low for a thriving industry, especially in view of the dramatic changes that have taken place in the field of transportation. Freedom to compete with other modes of transport has been much too severely restricted if one assumes an intention to preserve private enterprise in railroads. Permission to abandon unprofitable services has been granted too reluctantly. Requests for advances in rates have been granted too tardily and in too niggardly a fashion.

Finally, regulation has paid little attention to the problem of growth from internal sources. One of the striking features of the expansion of enterprises in this country—especially since World War I—is the amount that has come from internal growth. This is a fact that must be reckoned with, for it discourages investment in railroads under present circumstances. Any policy which is deliberately aimed at severely limiting internal growth on the ground that the public should not be expected to supply capital through rates ignores the fact that this is just what the consumers of services do in the areas of nonregulated enterprise where pervasive competition prevails.

Now what does all this mean with regard to adequacy of investment in railroads? I am not sure of the answer. Whether removal of restrictions on the general level of earnings and the granting of greater freedom to compete for traffic on a price basis would resolve the railroad problem cannot be answered in unequivocal terms. The ICC, however, evidently thinks that the answer is definitely in the negative. If this is not so, it is difficult to see why the Commission is so opposed to the three "shall nots" while granting general rate increases with such reluctance. It is possible, of course, that the Commission feels that it is a better judge of what is good for the railroads than they are. Perhaps so! But recent developments suggest that private enterprise in railroad transportation is faced with a precarious future unless some major changes in policy are forthcoming. I suspect that the railroads would prefer to drown by their own efforts rather than suffocate under the tender ministrations of a benign public authority. In any case, concepts of regulation that have shown practically no change since 1920, in a period that has experienced such startling technological and economic developments, can scarcely be awarded an accolade for imagination or adaptation.

The effect of regulation on investment in motor transport is even less easy to evaluate than it is for the railroads. I suspect that it has not

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had a very significant influence on total investment in motor transport except perhaps as restrictive railroad regulation may have diverted traffic to the highways. To the extent that this has occurred by depriving the railroads of traffic which they could move more economically, overinvestment in motor carriers has taken place. Regulation may have had an appreciable effect on the structure of motor transport, however, and therefore on the relative investment in common, contract, and private carriers. Why regulation in this area of transportation in the restrictive pattern of railroad control persists I cannot understand. As long as this situation remains, however, it does not seem possible to get a meaningful evaluation of an economical distribution of investment or traffic among the various types of motor carriers.

Somewhat similar remarks apply to investment in air transport. Commercial air transport as a whole in this country is dependent upon subsidy, both direct and indirect, as well as public aid in supplying air navigation facilities and airports. I doubt that air transport would be able to survive on anything resembling a workable private enterprise basis in the absence of the huge national defense program for air. Regulation, however, is patterned after that which is applied to the railroads. This means that rates are being restricted to the level necessary to give a fair return. This creates a problem of internal growth to a young and possibly uncertain industry. It contradicts the policy of public aid in that if commercial air transport can get more revenues it can be required to support itself more effectively. Present policies afford little help in arriving at an objective assessment of the investment needs in air transport.

Time does not permit an evaluation of the effects of public aid on total investment in transportation or the division of it among the various agencies, but a brief mention of the question must be made here. No matter what the policy regulation may be, it cannot solve investment problems if public investment in transport creates serious distortions in the allocation of investment or results in aggregate overinvestment. To what extent public aid has resulted in aggregate overinvestment I do not know. I am convinced, however, that the United States is spending too much on transportation today. I doubt that air, water, and highway transportation can meet the tests of reasonably economical transport supply. Air and waterway transport are not selfsupporting. Motor transport is not self-supporting in the private commercial sense. Public policy will undoubtedly continue to supply a large part of highway facilities for noncommercial purposes out of revenues that are only partially connected with user costs. Governmental supply of such facilities for commercial purposes, however, is another matter, especially if we desire an economical system of transport. If commercial motor vehicles had to provide their principal highway and terminal facilities on the basis of private ownership and private investment, there would be much less intercity commercial traffic by motor vehicle than there is today. Such an alternative cost test would not be welcomed by commercial highway users; yet it should be considered as a possible measuring rod for the apportioning of highway cost burdens. I very much doubt that the highway commercial user is carrying the burden of costs that sound public policy demands, and I am of the opinion, too, that the private car owner is bearing too large a share. Our public aid policy, like our regulatory policy, has not kept pace with changing conditions, nor has it been formulated in terms of an over-all modernized approach to our national transport problem.

### V. Competition in Transport

Competition in transportation has become so thoroughgoing in the last quarter of a century that exploitation of the market as a whole by any one of the modes does not appear to be a prospect now, nor for some time to come. The problem today is more than of developing policies that will give competitive forces a wide latitude in order to bring about an economical transport system than it is that of imposing restrictions on carriers for the purpose of protecting consumers. This, however, is no simple order, even though we assume acceptance of the principle of completely market oriented rate making and the full assessment of public aid on specific use. Competition has different implications for the different modes of transport that require careful distinction between interagency and intra-agency problems. I shall not deal with this matter as it relates to rate making although the implications for investment are very significant. The implications for some of the other aspects of policy are not so apparent but they may perhaps be of equal importance.

Public policy on the whole has insisted on separate and independent ownership of the various agencies, especially where they compete directly with each other. This policy of separation has been followed somewhat hesitatingly at times, especially in motor-rail relations, and it is apparently not part of our policy at all with regards to interagency ownership of petroleum pipelines. Transportation economists, for the most part, seem to have favored interagency ownership on the grounds that separation merely because of technical differences lacks a logical foundation, that interagency ownership will make for better co-ordination of service, that it would result in greater efficiency, and that transportation companies could adapt themselves to changing transport conditions more readily than is possible at the present time.

To me, these are not very persuasive reasons for permitting the development of transport companies. Competitive indices for the allocation of resources are the ones to which economists must constantly have recourse. A transport company embracing all modes would scarcely be likely to engage in competition with itself. If regional monopolies were developed, the monopoly problem would raise its head again on a wider scale than ever. Regional monopolies would be likely to present more problems of co-ordination than they would solve. It would be uneconomical, for example, to confine highway and air transport operations to the region served by the controlling railroad. Yet interagency ownership on any other basis which involves the railroads would present almost hopelessly complex issues because of the inescapably regional nature of railroads.

If the purpose of integrated companies is financial, then this would mean either that the railroads were deriving revenue from other services to assist in supporting their investment or that the ownership would be assisting in the limitation of competition. Either of these results is contrary to public interest. I do not see how integration of ownership can offer any aid to the railroad problem and I do see, on the contrary, how it might be used to bring about severe limitations on competition among carriers for hire. This would probably result in demands for more regulation and in demands for the elimination of as much non-hire and nonregulated transport as possible. This would scarcely be in keeping with public interest in a private enterprise economy.

Competition in transport today also has a significant bearing on the organization of administration of public policy. The assumption that the regulation of transportation is essentially a unified problem and that practically the same rules should apply to all of the agencies has led to the development of a uniform pattern of regulation and widespread support for a single federal agency of regulation. Transportation is not a single industry, however, and a uniform program is not the answer to today's issues. Regulation needs to be tailored to each mode. The problems are so distinct and the detail of regulation connected with each mode is so great that separate commissions could function more efficiently and more expeditiously. The ICC has to wear too many hats. Separate commissions could focus their attention on each agency independent of each other. Each could deal with the problems of its own mode without the pressures of the conflicting claims of the other. Each would be compelled to recognize the competitive requirements of its own charge. Finally, the competitive pressures of independent and separate responsibility would serve as a stimulus to initiative, imagination, and adaptation that is sorely needed in transportation today. Competition is an excellent antidote to bureaucracy and vested interest.

The formulation of policies for regulation and public aid as well as the administration of public aid are separate from the administration of regulation. They need to be handled by separate authority. The public policy questions which are involved are a responsibility of Congress and the President. Administrative commissions are not, and cannot be, constituted so as properly to discharge these functions. The importance of transport in the economy of this country warrants a Secretary of Transportation as a full-fledged member of the Cabinet. Until we have this it is difficult to see how a coherent and reasonably consistent national transportation policy can be developed.

#### VI. Wanted: A National Transportation Policy

What is urgently needed in this country is a national transportation policy formulated on the basis of a clear-cut recognition of our institutional objectives, the technological structure of modern transport, and the requisites of an economical system. This we do not have. The dual problems of total investment requirements and the economical allocation of that total among and within the different agencies can be met only by a thoroughgoing revision of our policies of regulation and our policies of public investment and public aid in the light of clearly formulated objectives. Revision of one aspect of the program without revision of the other would be only a half measure at best; yet each needs to be undertaken independently.

Regulation has given literally no recognition to the changes that have taken place since 1920. About all that has been done is to extend the pattern that was established and to urge that further extension of the same pattern is necessary even now. Regulation today is based on the policy that was developed for the control of monopoly, although the economic characteristics which gave rise to monopoly in rail transport do not exist for air, water, and motor. Whatever differences of opinion may arise in connection with the details for regulation of each of the modes, there does not seem to be much ground for contending that all of them can or should be controlled in the same fashion. Regulatory policies that refuse to acknowledge the pervasiveness of competition and adapt themselves accordingly are doomed to break down under the stresses of competition. Nor can the inequities or distortions that may be produced by public aid and investment be blamed entirely for the breakdown. Regulation must accept public investment as datum. Its basic tasks would be the same even though public aid were nonexistent.

On the other hand, revision of regulatory policies and procedures would not of itself solve the present problems. Public participation in the supply of transport facilities is too great for that. Private enterprise in rail transport cannot survive if the scales are too heavily weighted against it by public aid, and investment cannot be economically allocated if the agencies which utilize that investment are relieved of cost burdens which the others are compelled to bear. Moreover, public aid and investment applied and administered in the present unco-ordinated fashion without regard to a national transportation policy can only result in an uneconomical transportation system.

If it is suggested that any attempt at present to deal with current transport problems on such an extensive scale as this presentation has indicated is necessary would open Pandora's box, the reply is that it has been opened already, as the hearings at the last session of Congress disclosed. I have merely peered inside to see whether Hope is still there. I find that she is. There is no need to tackle all the problems at once, because, fortunately, they can be handled separately and in piecemeal fashion. The one requisite is that the steps taken to deal with the various issues be co-ordinated by a carefully formulated national transportation policy.

# DISCRIMINATORY AND COST BASED RAILROAD PRICING

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There has been no phase of industry subjected to more radical institutional changes in the last thirty years than transportation. The railroads, by the middle twenties, had arrived at what then appeared to be a relatively stable position. The days of extensive growth of mileage were over, the promotional phases largely a matter of the past. With the Transportation Act of 1920, earlier regulatory emphasis on restriction of rate and service discrimination was blended with a spirit of government interest in the welfare of the railroad companies. A multiple-layered institutional arrangement of price administration was firmly established. Proposals for rate changes were initiated primarily by individual company traffic departments (then considered by the private regional rate associations) and only if there was complaint, a general rate level change, or long- and short-haul violation did the key government regulatory agency, the Interstate Commerce Commission (ICC), act. Interrailroad competition emphasized not price but the gaining of traffic by superior service and salesmanship. All this tended to crystallize a rate pattern, under which most of the traffic moved, of separate rate adjustments for each of hundreds of commodities largely developed in response to both the competitive and discriminatory factors of an earlier period. To an important degree the institutional setting engendered rigidity and restriction on innovation or individual action.

In this earlier period most economists interested in transportation thought of railroading as an industry of sharply decreasing costs with fixed costs a half or more of total costs. The era of expansion had seen vast investments made ahead of demand and the capital costs associated with them loomed large, interest charges in 1910, for instance, being 12 per cent of revenue compared to less than 4 per cent today. Within limits, discriminatory pricing, based on what the traffic would bear or on what would move the traffic, was accepted. The distribution of overhead costs according to the elasticity of demand was viewed as making available the maximum of transport service.

In the midst of this setting of the middle twenties came a major technological revolution based on development of the internal combustion engine, aerodynamics, and highways. As a principal illustration, the truck, along with improved highways, provided a form of transport

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with entirely new service values by way of flexibility, door-to-door movement without transfer, increased point-to-point speed, and other attractive features. In contrast to the stabilized organizational pattern of the railroads, this innovation gave the opportunity for thousands of new firms to enter the intercity for-hire transport market which had been thought to be practically closed to new entrants. What was even more radical, the common carrier no longer was the sole means of shipping, for businessmen could now buy a truck and undertake privately and individually to carry their own goods.

The new forms of transport brought still another change for, except in the case of the pipeline, they all, whether by water, air, or road, used facilities provided by government. The building and operation of locks, airport runways, and lanes of highway were matters of government planning and financing. Such means of obtaining payment for the government facilities as were imposed on the using carriers, or the lack of payment, made the part of new carrier cost structures relating to way decidedly different from that of the railroads.

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In the course of the revolution the railroads were principal and successful advocates of imposing regulatory institutions basically similar to their own on their new common carrier competitors. There had to be established a new element of public policy with respect to the regulation of intermodal competition. In 1940 the ICC was directed to "recognize and preserve the inherent advantages of each mode of transport," encourage rate making without "unfair or destructive competitive practices," and to "preserve a national transportation by water, highway and rail." The meaning and interpretation of this policy has become the center of a major controversy between the railroads and their competitors because of the continued loss of traffic to the latter and the regulatory restrictions imposed on railroad rate proposals aimed at meeting the competition.

While these changes were taking place, statistical and cost finding methods improved. Data with respect to origin and destination and rates on individual commodity movements were obtained, at least for the railroads. Cost finding was pushed forward by the ICC and others so that some general data as to average unit costs for both railroads and trucking are currently available.

With the radical change in the institutional setting of the railroads, principles for ratemaking come up for review from the point of view of both private and public policy. At the private level the railroads are looking for ways to regain lost traffic as well as improve earnings on that which they still have. Their competitors in turn are eager to maintain their gains. At the public level, discrimination is still a major matter, since it continues to affect opportunities of places, persons, and

commodities. In addition, price in all its aspects has become a key point of policy in relation to allocation of traffic and resources to the rival modes of transportation.

The main thread of this discussion of these policy problems will be confined in the interest of brevity to the transport of commodities by rail and highway in carload and truckload lots. First, a discussion of certain cost characteristics is in order because of their significance both to discrimination in pricing and to price adjustment as a means both of improving load factor and of allocation between competing modes.

A critical point underlying the possible scope for discrimination in freight rates is the proportion of freight costs that vary with changes in volume of traffic. Opinions of both economists and practical railroad men have differed widely because of their varied interpretation of data, different attitudes toward controllability of costs, and their predilections toward discriminatory or cost based rate making. Over all, there is now a tendency to consider that the variable proportion is definitely higher than the one-third or one-half which was accepted by the transportation economists of the early part of the century. For example, the ICC cost finding study published in 1954 suggested, as a result of both period and cross-section statistical analyses, that freight operating expenses, depreciation, rents, and taxes (excluding federal income taxes) were from year to year and in the long run 80 to 90 per cent variable in all the districts of the United States at current levels of density. Investment—in this case in combined passenger and freight plant—was found in cross-section analyses to be variable in about this same proportion in the East and South but only about 50 per cent so in the West.

Concerning the railroad's competitors, sufficient data is available in the case of highway carriers alone to make parallel observations as to variability of costs. Similar ICC studies indicate for them that approximately 90 per cent of expenses and investment vary directly with density of traffic. A main factor in accounting for the higher variability is the previously noted fact that the motor carriers make no investment in way facilities, rather contributing for their use in a variable fashion through fuel and ton-mile taxes, tolls, and fees.

With respect to rate policies involving intermodal competition, the volume of potentially interchangeable traffic is so large as to suggest that the relevant variable costs are at least as high as those indicated

<sup>&</sup>lt;sup>1</sup>The data which will be presented come directly or by calculation from ICC, Bureau of Accounts, Cost Finding and Valuation, Statements No. 4-53, 1-54, 4-54, 5-54, 6-54; Bureau of Transport Economics and Statistics, Statements No. 550, 5341, MB1-6 (1953-54), TD-1 (1953) and Statistics of Railways in the U.S. in 1953, and Transport Statistics in the U.S. for 1954.

above. Motor-vehicle intercity ton-miles in 1954 were 215 billion, inland waterway 174, and railroad 557. If half of the motor vehicle traffic were captured by the railroads, it would mean a 20 per cent increase in their ton-miles. Traffic flows under principal individual commodity rate structures, aside from the competitive aspect, are also of the magnitude to suggest that the associated costs are largely variable. These high variable proportions leave little to justify substantial discrimination.

Discrimination can have another role: that of distributing deficits incurred in other than carload freight service under discussion. The principal example of this involves the failure in 1954 of Class I railroad passenger train revenue to meet even the expenses solely related thereto, with nothing left to cover return on investment, taxes, maintenance of passenger standards for track, and extra expenses of track and other facilities used in common with freight operation. Except for a gradual withdrawal from local services, most managements in the past have hesitated to take affirmative steps to give up a large block of revenue provided by a main passenger train service operated at high cost and have tacitly allowed freight revenue to cover any deficit. Regulatory policy supported by public sentiment has been to oppose railroad attempts at withdrawal, basically on the grounds that it was in the public interest to lean on a freight surplus. This country is committed to a free choice of mode of travel. The willingness of people to use and pay the costs of private highway transport to the extent that almost 90 per cent of intercity travel is by this means justifies the expenditure of unprecedented sums for it. At the other extreme the unwillingness to pay for the costs of rail passenger transport suggests that continued allocation of resources to that mode does not meet the test of their effective use and should not be required as a matter of public policy. In recent years an additional public consideration has been the potential need of passenger service for security reasons. Here public policy should be no different than for industry at large, where stock piling is undertaken by government as a defense expense. Such passenger facilities as the military may deem necessary should be the responsibility of the defense budget.

A second aspect of costs of importance to price patterns is the relation of vehicle loadings to unit costs. This rests in part upon the technical nature of resistances to movement which do not increase in proportion to increasing loads. Also, such added resistance to movement as there is involves in the main only increased line-haul motive power costs and loading has little effect on terminal costs. The significance of all this is suggested in the ICC cost finding data. The estimate of out-of-pocket costs to move an average box car in the East 500 miles

with a ten-ton load is \$149 and only 17.5 per cent more, or \$181, if the load is trebled to thirty tons. The cost per hundred pounds for the ten-ton load is 74 cents and for the thirty-ton only 30 cents. Between the extremes of seven tons and fifty tons found in actual traffic the unit costs go from 103 to 21 cents per hundredweight. With line-haul truck costs the effect of weight is considered negligible and unit costs are estimated as directly inverse to weight of load. Another important load factor consideration involves the utilization of round trip capacity, since, except for pipelines, all modes of transportation are saddled with the necessity of returning crews and equipment to their starting point whether there is return traffic or not. However, even in the extreme case, assuming no extra terminal costs, the change from having no return load to having one equal the original load can do no more than halve unit costs, considerably less dramatic than the reduction to one-fifth by increasing car loading from seven to fifty tons.

The relation of line-haul and terminal elements is another aspect of cost significant to rate patterns. This is particularly important with the railroads where high terminal costs are the result of the physical nature of operations, with economy of line-haul performance being obtained by assembly of a large number of cars in a train. For example, the ICC out-of-pocket cost data for the East for a boxcar show the average terminal cost to be \$52 and the line-haul 23 cents a mile with thirty-ton load. This terminal cost is equivalent to a 214 mile haul. Thus a 50 per cent increase in a 100 mile haul to 150 miles results in but a 16 per cent increase cost. But for longer hauls, say 1,000 miles, a 50 per cent increase in mileage would produce a 41 per cent increase in cost. In practice, terminal costs vary widely between commodities, size, and other characteristics of terminal cities and commercial distribution practices. There is no field for railroad cost finding that would reveal more fruitful data.

While there are other phases of costs that must be passed over in this brief discussion, there is one final aspect that is specially relevant to the problems of allocation between modes of transport. This rises out of the fact that the government provides the way facilities for most of the newer forms of transport. If rates are to play a rational part in the allocation of resources, it is imperative that the government incurred costs be included in the cost and rate calculations of the newer carriers. This introduces difficult pricing problems, as for instance the apportionment of the costs of the federally financed inland waterways to the varying types of barges, flotillas, and traffic. However, the taking in hand of this particular problem must wait upon the resolution of the basic consideration—primarily still in the political arena—of whether way costs are to be borne at all by users. The politician and many of

his constituents appear unready to accept cost criteria for allocation. Changed assessment of the behavior of costs is not the only basis for questioning the discriminatory aspects of rate making. Among general economists as well as some interested in transportation there is now a substantial body of opinion that optimum resource allocation of the economy is to be obtained with incremental cost pricing or bases closely related thereto. Even in terms of classical theory, the increase of the areas of competition for railroad transport might be expected to force prices more toward these costs. Of course, anything close to perfect competition is ruled out by the regulatory restrictions on entry and lowering of rates and the continuation of association rather than independent rate action. Even with all these restrictions, the increased number and variety of firms and facilities in the transport market has resulted in widespread price changes. But the tendency has been for railroad price adjustments to be aimed merely at meeting motor carrier rates, with such compensation as is necessary to match lower loading

and packing costs and the attraction of lower minimums and faster service. This is essentially a continuation of the traditional consideration of value of service in making rates and incremental rail costs come into play only as a floor below which competitive rail rate adjust-

ments are not made.

There are also changes in the elasticity of demand for transport which tend to restrict the scope for discrimination. There is an increased mobility of industrial facilities, a greater emphasis on decentralization, and more widespread acceptance of plant location analyses. Large industrial firms have committed substantial resources to decreasing their transport costs. Among the results are relocations producing outright decrease in the use of transport service and more active searching for or developing the cheapest of a wide choice of different modes of transport. These efforts tend to be directed against movements involving the highest rates, among which are those resulting from discriminatory pricing.

The increased competition in the transport market might be expected to produce changes in the pattern of rates toward increased recognition of cost structure characteristics. This became evident in the middle thirties with so-called "all-commodity" rates which disregarded the value of the commodities carried in an effort to get increased carloading and lower terminal costs for small shipments. A more recent, similar move has been charging for carriage of highway trailers on flatcars without consideration of the value or nature of contents of the trailers. Most railroads have, however, opposed this approach. In light of the earlier comments concerning the decrease of unit costs with increasing load, the practice also beginning in the thirties of varying some indi-

vidual commodity rates with loading per car falls into the type of change under discussion. The simplest example of this is the quotation of one rate for a minimum load, generally in line with what has been traditional, and a lower rate if substantially more is loaded in a car. More complicated are the instances of several minima with graded rates corresponding to each, or a basic rate and weight minimum with all over that amount being charged a markedly lower amount. In general, these rate reductions do not fully reflect the lowered costs of heavier loads. A measure of this is suggested by the ICC cost scales for an average boxcar movement in the East. Beginning with the incremental cost per hundred pounds of a 40,000-pound load as 100 per cent, the unit cost drops to 73 per cent with 60,000 pounds, 60 per cent for 80,000 pounds and 52 per cent for 100,000 pounds. These proportions are based on only one cost finding formulation, which may over- or underjudge the possibilities, but they are so great as to warrant active promotion of carload rate patterns based on these considerations as a matter of both private and public policy. The cost characteristics also point to a continuous rather than block pattern for such incentive rates. The long-run possibilities point still further toward design of cars with larger usable cubic capacities by way of exploiting the railroads inherent technical advantage of carrying heavier loads with a minimum increase in resistance and cost.

In some areas, public policy has been hostile toward reduced rates for the larger shipments on the ground that the small businessman may be put to a disadvantage. In the earlier part of the century, reduced multiple-car rates were rejected by the ICC on this ground, but the practical fact that the large shipper obtained lower transport prices anyhow by using alternative modes led to a lifting of the absolute ban. In respect to the largest loads which may be put in a single car, the insistence upon protection of the small shipper or consignee seems to overlook the fact that business of all sizes has shown increasing ability to adjust to varying conditions and that transport savings approaching those suggested for the heavier loadings would result in adjustments in methods of distribution to the advantage even of smaller business. With multiple car rates and single car incentive rates based on costs, the complaint of discrimination against the smaller shipper from the economist's point of view seems groundless.

Low rates made to take advantage of empty return movements would appear to be an obvious case of deference to cost factors. Lower rates, loading considered, in the direction of light movement are not generally evident in the waybill data. There are instances to be noted among the individual commodity rate structures. At the beginning of the century a low published rate on newsprint from Maine and northern New

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Hampshire via a Canadian route to Chicago was said to be of this sort. In the early days of the Great Northern, Mr. Hill apparently anticipated a predominantly westward movement because of heavy trade to the Orient; so he established low rates on lumber eastward. The westward, all-commodity rail rates from the eastern seaboard have been justified in part because of available empty cars, but the ICC waybill sample data show little difference directionally in these rates between the East and Illinois, for instance. The use of specialized equipment limits the possibility of return hauls and the location of great agricultural and mineral resources in the West and South with the great proportion of the population in the northeast limits demand for westward and southward transport service.

From the ICC wholesale value, cost, and waybill sample data now available, it is possible to obtain some over-all measure of the variation in average rates and revenue per car and thus roughly gauge the range within which cost and discriminatory elements actually operate. For a middle range haul, 400-599 miles, a comparison of the six commodities with the highest and six with the lowest rates and revenues per car show typical extreme ranges. These are shown in the following table. Military and railroad equipment items and those where raw material rates are tied to finished product are excluded.

THE COMMODITIES WITH	THE SIX HIGHEST AND	SIX LOWEST AVERAGE RATES AND
Revenue Per	R Car for the $400-599$	MILEAGE BLOCK—1953

Commoditi	es with	Highest	RATES		COMMODITIES W	үітн Нісі	iest Cai	R REVE	NUE
``	Value per Ton	Load per Car	Rate per Cwt.	Revenue per Car		Value per Ton	Load per Car	Rate per Cwt.	Revenue per Car
Wool not in grease. Trucks. Luggage Autos. Refrigerators. Furniture. Commodit.	774 6,924 1,060 1,056 818	10 8 7 10 8	\$1.83 1.75 1.55 1.47 1.46 1.44	\$257 334 248 204 292 241	Aluminum bar Drugs Lead and zinc* Alloys for steel. Vegetables, dried. Iron and steel bar.	2,574 581 225 1,414 95	46 ton 31 34 55 30 52	\$ .76 1.02 1.19 .54 .98 .55	\$693 635 611 596 587 574
Iron ore	\$ 10 4 21 8 70	65 ton 58 57 60 63 51		\$208 183 226 252 269 224	Sheep, single deck. Sheep, double deck Swine, single deck. Cattle, single deck. Hay.	\$ 452 450 443 370 29	6 ton 9 8 11 14 18		\$ 89 130 151 161 161 171

<sup>·</sup> Not otherwise specified.

These data reflect a general tendency for low-value commodities to be heavy loading and to take the lowest rates. Conversely, high-value items tend to be light loading and to take high rates. Neither the highest nor lowest rated nor value items produce extremes of car revenue. The highest value and highest rated items tend to load so lightly that the high rates do not produce peak revenue. The extreme revenue per

car commodities does not reflect consistent or proportionate relationships of value or loading but the lowest are associated with light loading. Examination of a broader sample of twenty instead of six extreme car revenue items shows the lowest car revenues still associated with light loads, but, except for animals, not the very lightest. These twenty lowest revenue commodities are, with one exception, entirely products of the farm, half with values above the median value of \$249 per ton for all commodities in the waybill sample and all well below the median loading of 28 tons. Of the twenty highest car revenue items, half are heavy loading (34 to 55 tons) metals and manufactured metals. The other half includes medium loading (27-34 tons) dried and frozen farm products, drugs and cigarettes (26-31 tons), and heavy loading basic chemicals and raw materials (31-56 tons). For these items values range from below the median for iron and steel items and acids to very high for drugs and cigarettes. Maximum car revenues are associated with high ranges of loadings and with values above the lowest levels. Rates on the lighter loading items, even of highest value, are not high enough to produce top car revenue.

The range of car revenues, excluding the single item of sheep, single deck, is from \$151 to \$693—roughly a 1 to 4 range. For other distances a similar range is to be found. The majority of the lowest revenue items are farm products which involve movements most likely to have empty return hauls and thus no traffic with which to share round trip costs. In addition, many of these commodities incur considerably higher than average loss and damage claims. On the other hand, a substantial proportion of the commodities accounting for the highest revenue move under routine conditions of service. The ICC cost scales for the average haul involved for these revenues indicate that average incremental costs are roughly the same for a forty-ton box carload, a ten-ton stock car, and a twelve-ton refrigerator carload. For the eastern and western districts and the southern region, these per car costs average \$192, \$157, and \$153, respectively. Since substantial differences in costs arise for the transport services of particular commodity movements, the averages can be considered no more than an indication of order of magnitude. Nevertheless, they suggest the possibility that some of the lower per car revenue commodities may not cover incremental costs and that the higher revenue ones may be contributing at least as much as two or three times those costs. It is also apparent that items taking high rates may load so lightly as to produce such low car revenue that discrimination is not involved.

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The ICC data also indicate the variations in the extent to which added costs of increased hauls are reflected in average rates. The following table shows for commodities which move over a wide range of

distances the increase in per car revenue for six mileage blocks, beginning with that for 400-599 miles. It also shows the increase in ICC incremental costs for the average distance in each mileage group for box and refrigerator cars used in moving those commodities.

INDICES OF CAR REVENUE		" Day	TT 1052
INDICES OF CAR REVENUE	AND INCREMENTAL \	LOST IN KELATION TO	L'AUL-1933

	400-	600–	1,000-	1,400-	2,000-	Over
	599	999	1,399	1,999	2,999	3,000
	Miles	Miles	Miles	Miles	Miles	Miles
Median of 16 perishable agricultural products  Lumber  Laundry equipment  Vehicle parts  Forwarder  All manufacturing and	100%	135%	172%	208%	253%	290%
	100	124	173	220	260	290
	100	133	185	244	293	382
	100	130	235	374	358	480
	100	123	157	252	279	320
miscellaneous	100	127	182	262	308	321
tor cars	100	144 151	201– 206	279 288	375– 396	483– 502

In the case of perishables and lumber a sixfold increase in distance is accompanied by less than a threefold increase in revenue. Lumber and some of the perishables have the largest destination rate blanketing of any commodity and their rate patterns represent the extreme of disregard for distance. Forwarder traffic and the manufactured and miscellaneous commodities as a whole show but little over a threefold revenue increase. Comparison with the ICC costs suggests a failure to reflect in some rate scales the added expense of longer hauls. For lumber and over half of the sixteen perishable items the two longest hauls produced revenue below the estimates of incremental costs. This suggests that one of the hazards of a discriminatory philosophy may be pricing below profitable levels where demand is judged to be very elastic as with long-distance traffic.

Several of these aspects of railroad pricing suggest that the economists' basic assumption—that business sets prices to maximize profit—may not always be valid. The desire to obtain or maintain volume of business solely as measured by carloads, tonnage, or gross revenue seems at times to influence price decisions to the disregard of profitability, which is so difficult to determine. One explanation of this is that large-scale railroad organizations providing almost an infinite variety of services tend to emphasize aggregate cost and revenue relationships. This tends to remove potential motivation for patterning individual commodity rates so as to improve load factors and control effectively the particular costs associated with each commodity move-

ment. In turn, the grossness of these large-scale operations and the public knowledge of the large revenue pool also make it difficult to obtain acceptance of a public policy allowing the railroads to increase depressed rates or withdraw those services not meeting an incremental cost test. Clearly, any downward adjustments in line with costs must be accompanied by upward adjustments and withdrawal of unremunerative service to preserve the over-all balance of revenue and costs. Moreover, existing levels and relationship of rates have built up such large vested interests in specific locations and industrial, agricultural, and commercial structures that change cannot be rapid and emphasis on cost factors must be undertaken gradually.

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The failure to develop cost finding as an active tool of management either in controlling costs and load factors or adjusting prices during the transport revolution of the past thirty years has been the weakest aspect of railroad policy in meeting the new competition. In turn, the unwillingness of the leading carriers to accept costs as the basis for rate making as a whole makes it difficult to get acceptance of a public policy embodying costs and cost based rates as the criteria for allocation of traffic. The users of transport are aware of the tradition of reliance on discrimination by the railroads and many understandably insist on maintenance and even expansion of competition, if necessary under protection of railroad prices kept above cost, as insurance against still higher railroad prices in the absence of that competition. Many also feel justified in supporting a public policy of continued equalization of opportunity for producers and places with locational disadvantages, in spite of significant disregard of cost criteria or optimum allocation of resources.

#### TOLL ROAD RATES AND HIGHWAY PRICING

By CHARLES L. DEARING\*
The Illinois State Toll Highway Commission

During the past one-half century, the theory and practice of transportation pricing have commanded a prominent place in academic discussions. Historically, it is significant that these discussions have been dominated by the economic and social environment under which the provision of the facilities for the movement of goods and people have been organized, operated, and regulated during each of the major periods. Stated another way, the contributions of the social scientists who have devoted themselves to this field have followed economic and social trends. They have not directed or led them.

In a very fundamental sense the problem of railroad ratemaking is a great deal more simple than that of highway pricing. One agency has control, an agency which possesses broad regulatory powers. In contrast, the situation regarding highways is that forty-eight state authorities and the federal government control expense. In addition, the local street and road system is largely under the control of local units of government. The financial picture is equally as confused as the administrative, with support coming from user fees, property taxes, and federal aid. Distribution of funds is determined by a variety of formulas based on area, population, mileage, and on several classifications of streets and roads among the governments having prime responsibility for their road nets.

Under these circumstances, it is not surprising that the legislative bodies, the engineers, and the social scientists have encountered considerable difficulty in reaching basic agreement on fundamentals, much less in solving the intricate social and economic problems of the pricing of highway service even though intensive effort has been devoted to it for more than a quarter of a century.

This effort has by no means been wasted. For constructive results have been achieved even though they have been uneven. There have been rapid technological developments in highway transportation. The drastic shifts in authority and responsibility, especially financial, as between the federal and state governments, and, since the end of World War II, the apparently insatiable demand of the American con-

<sup>\*</sup>Now on leave of absence as a Senior Staff Member from the Brookings Institution, Washington, D.C. The author wishes to express appreciation for the valuable assistance given in the preparation of this paper by Dr. Richard W. Reed who is now associated with the Illinois State Toll Highway Commission.

sumer for automobiles, highways, and other highway transportation services has created new problems of highway financing and pricing which were not even contemplated when the bulk of our existing highway system was constructed. Obviously, the magnitude of economic resources set aside for highway transportation is such that the pricing of highways is a worthy topic of consideration by economists.

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With these observations as a background, I should like to devote the remainder of my paper on the general subject of the theory and practice of highway pricing to four topics: (1) the efforts of the state to solve this problem up to 1940 and general circumstances under which this work was done; (2) the immediate postwar developments in the conventional field of highway administration and finance; (3) the postwar development in the field of toll roads and the effect of this development on highway pricing; and finally (4) the manner in which the recent Federal Aid Program of 1956 is likely to affect this entire problem.

#### I. Developments in State Highway Administration and Finance up to 1940

During the four decades preceding 1940, the states assumed their present roles in supervising highway development. This trend began slowly about the turn of the century but gained momentum with the passage of Federal Highway Acts of 1916 and 1921.

With regard to developing resources for financing highway construction and operation in the twenties, the beginning of reliance upon the user tax to generate revenue needed for the rural arterial highways was of overriding importance. The states increasingly relied upon user fees in the thirties, with rapidly growing acceptance of the rationale that such fees were proper and equitable charges for public facilities which render a special service to vehicle operators.

Yet by 1940 it was apparent that something was amiss with the highway program in spite of the expenditure of 40 billion dollars on roads in the two preceding decades. Measured by standards of efficiency, convenience, and safety, the highway plant was deficient. Roads and streets which should have supplied free movement, economy, and personal convenience instead were producing congestion, intolerable waste of lives and property, and personal annoyance.

All the maladjustments evident before World War II, of course, were magnified by the end of the war. Functional and physical obsolescence by then was widespread. To meet the needs of the coming generation, everyone recognized that a new construction program would have to be forthcoming. And a few also emphasized the necessity for

the development of new concepts of highway pricing on a greatly improved application of the established methods.

The most important single factor leading to these maladjustments was the failure to follow consistently the logic of the benefit theory of pricing. If special charges are justified where the government provides special benefits, it follows that the proceeds from user fees should have been spent on roads which carried the greatest volume of traffic. Had funds been applied this way, it seems clear that the crisis in highway development could have been largely avoided. Instead, user tax revenues were employed to support large mileages of local roads whose existence, condition, and use were of incidental interest to the bulk of motor vehicle users. This "dispersion" of user funds has constituted a far more serious problem than the more publicized practice of "diversion," under which motor vehicle revenues are spent for other functions of government. In summary of this early period, too small a portion of available user funds was allocated to improve the high-density routes which should have had first priority in highway programming.

#### II. Postwar Developments in Highway Pricing

In two areas some progress has been made since World War II toward obtaining an adequate financial program for highways. Federal and state responsibility for the urban problem has been recognized, and the Highway Act of 1944 incorporated aids to urban areas as a permanent feature of the Federal Aid Program. Moreover, many states have sponsored studies of their over-all financing problem to determine highway deficiencies and needs and to recommend improvements of existing fiscal methods.

This problem is crucial: How are tax responsibilities to be apportioned among the various classes of users? In the first place, I think it is accurate to observe that general agreement among economists and students of public finance has been reached regarding some of the controlling principles which should prevail in the formulation of any equitable and productive system of user charging.¹ The pricing system should be used to the fullest extent possible as a means of charging users for the public facilities provided in response to their effective demand. Moreover, such prices should calculatedly maintain neutrality among the various competitive transport media. Subsidies should be eliminated from highway pricing so as to insure the most economic employment of all transportation services. Also, monopoly profits should not be earned. If they were, the burden of cost on highway transportation would fall heavily on commercial users.

<sup>&</sup>lt;sup>1</sup> See James C. Nelson, "Pricing of Highway, Road and Street Services" (mimeo.), pp. 12-25.

One of the major problems related to equitable pricing is the fact that the modern highway is a joint-use facility. It is built to accommodate vehicles of varying weights and traffic flow of varying densities. It is widely agreed that different classes of users should be assigned separable construction and maintenance costs and some share of "common" costs. The problem is to determine the distribution of separable costs.

The relevant theoretical problems which have been discussed in professional literature narrow down to two general categories; namely, the cost approach or value-of-service approach.<sup>2</sup>

Most students have accepted the so-called "incremental" method, involving a cost approach, as theoretically valid. The pricing structure here would be determined by assigning successive cost increments of the road structure to vehicles of increasing weight, starting with the "basic" vehicle—the passenger car—and ending with the heaviest vehicle permitted. Relatively simple in concept, this approach has been rejected by some students of the problem because of the vast amount of data required, which is time consuming and expensive to collect and at times difficult to apply.

The principal alternative to the incremental method is the ton-mile or weight-distance approach, which attempts to measure benefits to the vehicle user. Actually a value measure must be determined rather than ton-miles. Even though such values based on time and mileage savings can be found, this approach rests on more questionable theoretical ground than the incremental method. Essentially the ton-mile method attempts to assess benefits before the benefits are realized.

Judging by traffic engineers' estimates for toll roads, it is evident that similar projections for free roads may not correspond to actual experience.

By contrast, according to the incremental method, once the underlying costs are determined for each class of vehicle, roads would be constructed to accommodate traffic volumes based on statistical forecasts. This approach corresponds more closely than the benefit theory to pricing methods of private enterprise and, consequently, is subject more directly to the disciplines of a competitive market.

In recent years a number of states have made serious efforts to combine the best elements of the incremental and the benefit theories in order to achieve a more equitable and economic solution of the pricing problem. In some cases taxes on diesel and other nongasoline fuels have been raised. Some states have revised their license fees to approximate

<sup>&</sup>lt;sup>2</sup> Nelson, *loc. cit.*, and G. P. St. Clair, "Suggested Approaches to the Problems of Highway Taxation," *Proceedings*, Twenty-seventh Annual Meeting, Highway Research Board, December, 1947, pp. 1-6.

roughly higher wear-and-tear costs of the heavier vehicle on the roads. More important from the point of view of pricing is that several states have adopted a so-called "third structure" tax, which varies according to a weight-distance factor. The reasoning here is that the . two-structure tax system—licenses and fuels taxes—cannot exact sufficient payments from the heavy commercial vehicles to compensate for their use of the road. These taxes have been adopted following the recommendations of the financial and needs studies.

However, recent summary of several studies published in Public Roads concludes "that the general trend is for the tax laws enacted by the State legislatures . . . fall short of the tax-study recommendations."3 From this summary of what the states have been doing in recent years, it seems apparent that in spite of the difficulties of overlapping jurisdictions and the intense pressures of interest groups, some progress has been made toward establishing a rational pricing system for the highway plant.

The next question for consideration is the extent to which the toll road development has contributed to a solution of highway pricing.

#### III. Postwar Toll Road Developments

First, a few observations on toll rates now in existence. Generally, tolls vary in direct proportion to distance. A notable exception is the New Jersey Turnpike, where the authority deliberately has incorporated a differential rate structure. Other slight variations from precise per mile rates exist only because of the accident of rounding prices to the nearest five cents. In recent months greater variability in the per mile charge for commercial vehicles has been suggested and in one case adopted.

There are also significant differences between passenger car and commercial user tolls. The rates for heavier vehicles increase but not in direct proportion to weight. In a 1953 study of vehicle toll charges it was found that per ton-mile the heaviest vehicle paid about half the toll charge of a passenger car on the basis of average weight and about 30 per cent on the basis of the maximum weight of the truck.4 This study considered only the published toll rates.

Two other elements lead to the conclusion that these figures, low as they are, are still higher than the true rates truckers have to pay. First, states having toll roads also have third-structure taxes, which in some cases are levied on a mileage basis. Those states have canceled the tax

<sup>&</sup>lt;sup>3</sup> G. P. St. Clair and Hugo C. Duzan, "Highway-User Tax Schedules Recommended in State Highway Finance Studies," *Public Roads*, October, 1956, p. 78.

<sup>4</sup> H. C. Duzan. "Vehicular Charges on Highway Toll Facilities," *Proceedings*, Thirty-second Annual Meeting, Highway Research Board, January, 1953, pp. 45-67.

liability of truckers for mileage covered on their toll roads. Second, several authorities have incorporated a discount for commercial vehicle users, based on the dollar volume of tolls paid by a single trucking firm. This, of course, also reduces the effective toll rates.

The use of one or both of these devices can effect a considerable reduction in published rates. For example, over the bulk of mileage on one toll road the published rate for the heaviest class of vehicle is four times the passenger car toll. After deducting the refund for the thirdstructure tax and after taking full advantage of the volume discount. the heaviest vehicle may pay a net toll equivalent to only about 150 per cent of the passenger car fare.

In all fields of transport regulation the degree of flexibility with respect to rate changes is an important issue. The same questions regarding flexibility versus rigidity have already arisen in the administration of toll roads. Although experience in this field has been short, several generalizations are possible especially with respect to contrast between the situations of toll authorities financed on a strict revenue bond basis as compared with the method under which general bond financing is combined with revenue bond financing.

The toll road authorities are generally given statutory rights to establish and charge tolls, subject to the provisions of the bond resolutions or trust indentures. The bond resolutions generally limit this power by requiring that authorities place into effect toll rates "in substantial conformity with" and in many cases "and not less than" the rates recommended by the traffic engineers.

As to altering toll rates already in effect, the bond resolutions usually give the authorities greater latitude in exercising their discretion. It is usual, however, for the resolutions to require the engineers to certify that any changes in tolls will not result in a decline of total revenues.5 In some instances the rules are more confining. On the New Jersey Turnpike the initial rates must be kept in force until December 31, 1959, before they may be changed.6

The Bond Resolution for the Illinois Toll Highway restricts the Commission with respect to pricing more than similar instruments do the other toll road Commissions. On the Illinois Toll Highway toll rates may be increased or decreased if all funds and accounts are credited up to required amounts. However, if funds and accounts were not up to requirements—in other words, if the Commission were in financial

<sup>\*</sup>See, e.g., New York Thruway Authority, General Bond Resolutions, June 7, 1954, Sec. 606, 609, and 1011; Pennsylvania Turnpike Commission, Trust Indenture (2), June 1, 1948, and September 1, 1952, Sec. 501 and 502 in both indentures; Ohio Turnpike Commission, Trust Agreement, June 1, 1952, Sec. 501 and 502; and Main Turnpike Authority, Trust Indenture, January 1, 1953, Sec. 501 and 502.

\*New Jersey Turnpike Authority, Resolution Amending Resolution Authorizing the Issuance of Revenue Bonds, September 16, 1952, Sec. 513 and 514.

difficulty because of insufficiency of toll revenues—only an upward revision in toll rates is permitted. Hence, the Commission does not have sufficient flexibility to innovate toll changes in the light of altered economic circumstances.

With these exceptions the toll road authorities can be said to have a fairly free hand at least in changing rates. It has been the general rule also to allow the authorities to establish commutation fares and volume discount rates for trucks without the necessary approval of the engineers.

A somewhat novel situation exists in New York, where the original toll rates are itemized in the bond resolution. The rules governing changes in tolls are similar to those of other authorities. New York, however, offers a \$20 permit to passenger car owners registered in the state for unlimited use of controlled sections of the road. This permit system was placed into effect as a moral obligation to the people of the state for their overwhelming support of a constitutional amendment which permitted the authority to issue 500 million dollars of bonds under a state guarantee. This guarantee materially reduced the cost of financing. Analysis of permit holders' travel indicates that they pay a very small fraction of the 1½ cents-per-mile charged to passenger car users who are charged the established toll rates. The authority is at liberty to raise the price of this permit or eliminate it.

In many of these variations it is pertinent to inquire into what standards or principles govern the establishment of toll road prices. First there are certain procedures used to establish the original rate schedule. Before the toll road is opened for use, traffic engineers make intensive studies of travel patterns to estimate what part of existing traffic will be diverted to the toll road and to furnish the basis for determining the toll rates. Motorists are stopped and interviewed; data are punched, tabulated, added, adjusted seasonally, correlated, compared, expanded, and projected.

The engineers place special emphasis upon cost savings to truckers, which are broken down into a number of categories and analyzed for purposes of prediction. Competitive conditions of parallel facilities are evaluated in these investigations. Time savings over competing routes are particularly important as the toll road, in order to be financially successful, must attract some of the traffic from those routes. With these factors evaluated, a toll rate is established for passenger cars.

<sup>&</sup>lt;sup>7</sup> Illinois Toll Highway Commission, Bond Resolution, October 25, 1955, Section 4.01.
<sup>8</sup> New York Thruway Authority, op. cit.

Principal considerations are: reduction in fuel, maintenance, tire, depreciation, and insurance costs; savings in time per trip; and increase in truck utilization and improvement in service. See, e.g., Madigan Hyland, Estimated Traffic, Revenue and Expenses of the New York State Thruway (2nd ed., 1954), pp. 66-74.

Then toll rates for commercial vehicles are set using the passenger car rate as the base. Thus factors of demand are analyzed at length to determine initial rates.

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But what about the cost of providing the services of the toll road to the various classes of vehicles in the determination of rates? The answer, in brief, is that they are not considered. Under no circumstances in toll roads investigated is there any attempt to set tolls with the idea of offsetting the cost of providing road services to the various classes of vehicles. Only in the over-all cost sense are the effects of rates considered. That is, rates must be set so as to cover bond servicing requirements, operations costs, and contributions to sinking and other funds.

If any principle obtains with regard to setting initial rates, it is that they are set with a view of charging what the traffic will bear. An exception to this rule exists in some states like New York, where Thruway toll rates are not set with the aim of maximizing revenues. The reason is that with the state guarantee behind the bonds, the problem of bond coverage is not so imminent as in those states where toll revenues must furnish the resources to satisfy financial commitments.

We have observed earlier that most states have encountered difficulty in resolving the theoretical and administrative problems of reconciling or combining the incremental and the benefit theory of user charging. In view of the fact that modern toll road administrators should have been able to avoid most of these problems, it appears strange that they have for all practical purposes adopted a straight "what the traffic will bear" basis of pricing.

Most toll road authorities are in an enviable position with respect to pricing. They start afresh with no archaic financial structure, with new facilities the cost of which is precisely determined and which should be capable of analysis both from an engineering and an economic standpoint. The road lends itself readily to incremental cost analysis, being a homogenous facility of uniform quality. There is little need for resolving any allocation problem between user and non-user, in spite of the fact that land values appreciate considerably in the neighborhood of toll roads—and other limited-access roads—frequently before they are opened for use.

If any road can be operated on strict commercial principles, surely toll roads can. The problem of determining costs attributable to various classes of vehicles, then, should be considerably more simple than that posed by an analysis of a state highway system.

The toll authorities should be in a position to set prices which reflect the cost of the road to various users, charging various classes of traffic their full share of separable costs and allocating the remainder by some rational formula, perhaps at the outset following patterns set in railroad rate setting. The goal of the authorities should be to eliminate any monopoly profits and any subsidies. As public bodies, the authorities should be vitally concerned in maintaining neutrality among the various modes of transportation.

We have noted what principles or lack of principles seem to prevail in setting initial toll rates. What has been the practice of the toll authorities themselves with regard to rational pricing?

The conclusion appears inescapable that the toll road authorities have for all practical purposes delegated the problem of rate making to the traffic engineers on the assumption that they are the final "experts" in this field. In effect, the initial toll rates imbedded in bond resolutions, etc., have been set by engineers and subsequent adjustments presumably to meet changing economic and transport competitive conditions have similarly been determined by traffic engineers.

The pattern has been to keep existing rates intact as long as total revenues have covered financing and operating costs and the required deposits to various funds. In fact, instances of rate changes have been relatively few in number. In virtually every instance the compelling reason for change has been that revenues were not sufficient to meet financial requirements. In one case the increase was instituted because the cost of construction proved to be considerably higher than originally anticipated. In other cases the traffic experience has been at variance with original estimates of the engineers. Changes in rates were made to bring total revenues up to requirements.

It has already been indicated that with extensive preliminary traffic surveys made by engineers at least the demand side of the pricing picture is investigated thoroughly. That the toll road authorities do not keep up to date on demand factors is suggested by the experience of at least one road—the Pennsylvania Turnpike. A rate structure predicated upon the favorable competitive position of the 160-mile original section has been retained on the newer extensions. Turnpike officials have suggested that these prices for commercial vehicles have discouraged traffic on the newer extensions, where the quality differential of alternative free roads is not nearly as great as between the free roads in mountainous central Pennsylvania and the original section of the Turnpike.

In summary, toll rates are established without regard to assigning costs in proportion to the degree to which various classes of vehicles may have contributed to those costs. Also, until changing circumstances have made such impact as to cause a marked effect upon total revenues, there has been little attempt to modify rate structures with the idea of adjusting them to current economic conditions.

In many respects this conclusion is somewhat distressing with respect to the failure, to date, of toll road authorities to price their services in accordance with what most of us would consider to be a rational basis. They have not been inhibited by historical cost problems, by the political allocation of user charges, nor by legislative rate making that has traditionally hampered the states in establishing scientifically sound methods of charging for use of highways provided under conventional methods of administration and finance.

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On the other hand, the obligation of most toll road authorities runs directly to the bondholders, and their primary responsibility is to make the venture financially successful. Second, it is obvious that they have considerable freedom in utilizing the principle of what the traffic will bear in establishing their toll rates since the user fees charged on alternative and competitive so-called "free roads" is not based on any cost calculations.

The net conclusion of the analysis up to this point is that some states have made constructive beginnings toward the solution of the highway pricing problem and that toll road administration to date has made little. The latter point is true despite the fact that the toll road device is especially well adapted to identifying the relationship between cost of service for each class of vehicle. The enormous amount of data available from toll road operation bearing on this issue will, of course, be invaluable for purposes of future state highway planning, especially where the new facilities will be constructed as limited access roads on the interstate system. As a matter of fact, with the exception of this interstate system under the 1956 Federal Aid Program, it is very likely that toll road authorities will be forced to rationalize their pricing system and move in the direction of competitive pricing based on incremental cost calculations as distinguished from the benefit theory or what the traffic will bear.

## IV. Implications of the New Federal Approach

Passing references have been made above to the Federal Aid Program. Any discussion of highway finance and pricing must take into account this important factor, particularly in view of the provisions of the 1956 Federal Aid Highway Act. The new program has two important points of radical departure from past Federal Aid acts. First, it authorizes a considerable amount of money—to be spent over a thirteen-year period—for the 41,000-mile Interstate Highway System. The second point of departure is the creation of a Highway Trust Fund into which part of the revenues derived from taxes levied in the Act will be earmarked. Presumably, the Fund is to be self-liquidating over the thirteen-year period.

Recent developments in the administration and financing of Federal Aid Highway Program will clearly tend to confuse and com cate the problem of pricing, both at the federal and state levels. I torically, the programs for federal aids to states in the highway f have been based on the well-known principle of grants-in-aid. 'underlying theory here has been that there were certain national jectives to be achieved in highway provision that should be paid out of general federal taxation, and that there existed wide variation the capacity of the various states to provide essential highway servicall justifying a program of tax equalization on the part of the fedegovernment.

Under this basic federal-state arrangement, which had prevasince 1921, there has never been any so-called "linkage" between amount of money collected by the federal government from gene excise taxes on gasoline and other automotive products on the one hand, on the other, the amount of money appropriated by Congress federal highway aids to the states.

The 1956 Federal Aid Highway Program constitutes a radical parture from this basic principle. In the first place, it increases federal responsibility for the 41,000-mile Interstate System from traditional 50-50 matching to 90 per cent to be paid outright by federal government. Second, it introduces for the first time a syst of federal highway user charging based essentially on the same conce that have been utilized by the states for many years in financing thou programs.

The net result of this new program is to superimpose a federal syst of user charging on the existing state systems and to shift major deminations in this field from the state to the federal level of governments. We may, therefore, anticipate a rapidly developing competition un this arrangement between federal and the state governments for expectation from identical sources of revenue to be derived from the us of the nation's highways.

This follows from the fact that the 1956 Federal Aid Program trudes upon the revenue resources of states by increasing the fuels t establishing a use tax for heavy commerical vehicles (quite sim in their effect to many state license taxes), and imposing levies automotive products which cannot be classed as use taxes in the t sense. As a result, the idea of matching tax imposts with actual use highways is blurred, and principles of equity and neutrality tow various transport agencies expressed above are virtually ignored.

Finally, the establishment of the Highway Trust Fund incorpora the "linkage" idea into the Federal Aid Program. If this means t federal taxation for highways is to operate on benefit principles, tl it follows that the federal government will have to make an assessment of costs and road-user benefits which will be more complex than anything the states have attempted. In fact, the 1956 Highway Act makes a provision for such a study which is to be finished by March 1, 1959.

In final analysis, although the new Federal Aid Act makes a very ambitious attempt to remedy the highway deficiency problem, it appears that there are in it many possible dangers to the development of scientific highway-user pricing programs. If the federal government usurps the principal avenues of user taxation and takes the principal responsibility of providing capital for the Interstate System, the states may continue to use their highway funds to develop the lesser traveled roads and neglect the major routes. Progress they have made toward a rational pricing system may be nullified or obstructed by federal activity.

Clearly, the 1956 Federal Aid Highway Act moves in the direction of duplicating the state taxing mechanism. By the same token, it is apparent that assumption of managerial responsibility by the federal government will follow. It is doubtful that any such drastic alteration of responsibility for road provision will contribute to administrative efficiency or to equity in highway pricing.

#### DISCUSSION

MERRILI J. ROBERTS: Professor Healy has very effectively marshalled a host of empirical evidence relating to railroad costs. Particularly interesting are his cost breakdowns which point up the loose foundations of railroad rate structures. As I understand his argument, the evidence supports two related propositions: (1) discrimination is an inappropriate pricing tool under present operating and market conditions, and (2) railroads are giving inadequate attention to costs in their price making.

In questioning discrimination, Professor Healy relies heavily on the proposition that railroad costs are much more variable than formerly, probably within the range of 80 to 90 per cent. While the allocating function of discrimination is clearly more restricted with 80 than with 40 per cent variability, there is still an overhead problem and a degree of underutilization of significant proportions. For example, it might make a great difference for net revenues whether a service were priced at 80 cents (some reflection of MC), \$1.00 (reflecting AC), or \$1.20 (representing a disproportionate demand allocation of the overhead burden). The abandonment of discrimination would itself curtail utilization and widen the gap between AC and MC. Discrimination should not, therefore, be rejected as an overhead allocating device if it is acceptable on other grounds.

Furthermore, even the variability percentages cited may understate the case for discrimination on cost grounds. The Commission's studies reflect long-run out-of-pocket costs which include a return on investment increments which may be occasioned in the future but which are not a cost today. In the market generally, pricing is a short-run phenomenon, reflecting day-to-day cost and demand situations, with periodic changes in prices to reflect altered conditions. Adapting prices in this fashion to changing costs is regarded as a desirable long-run goal for the economy generally. But in the transport sector we have developed a fetish for price rigidity which is suspect in other

Nor do I find in the principal paper any real consideration of joint costs as a basis for demand pricing. Supplying all the capacity an optimum-size plant will economically produce may still entail uneven directional and temporal utilization. While not considering joint cost as such, it is mentioned obliquely and in a rather puzzling way. In his appeal for more attention to costs, Professor Healy observes that "low rates made to take advantage of empty return movements would appear to be an obvious case of deference to cost factors." On the contrary, this looks very much like demand pricing.

Beyond the cost evidence, Professor Healy asserts that theoretical considerations oppose discrimination. Unfortunately, he does not argue the case, but simply says that there is "a substantial body of opinion that optimum resource allocation . . . is to be obtained with incremental cost pricing." He later objects that "incremental rail costs come into play only as a floor below

which competitive rail rate adjustments are not quoted." But I do not understand that he proposes marginal cost pricing; at least he does not deal with the many problems created where MC and AC are not equated.

It is further argued that the theoretical case for discrimination is undermined by the rise of competition "which would be expected to force prices toward marginal costs." He does not suggest a gravitation to the level of average or fully allocated costs, which are the antitheses of discrimination. The new competition is far from perfect, since rival services are imperfect substitutes and both the demand and cost functions are quite different for relevant ranges of traffic. Under discrimination, the appropriate rates for each agency group will be determined by these demand and cost considerations and will not gravitate to the level of average costs. Interagency price competition will change the shape of railroad discrimination, since it will alter the slope and position of demand curves and affect some more than others. The result may be rate differences more closely related to cost differences, but this does not spell the elimination of discrimination as a pricing technique. The gravitation of prices toward marginal costs because of flattened demand curves is itself a result of discrimination.

As a further indictment, discrimination is mischievous because it has taken advantage of highly inelastic demands to subsidize such unprofitable services as passenger operations. But it is not certain that discrimination is the real culprit. The courts have held that the passenger deficit is a cost that is appropriately passed on to the freight service; without the revenue increments gained from discrimination—if this is an immutable principle of law—the revenue situation of the railroads might be precarious indeed. In addition, the courts have sanctioned Commission-imposed freight rates that were apparently below direct cost. Changes in legal principles rather than pricing techniques are called for here.

Although suggesting that discrimination is inconsistent with cost structures, theoretical considerations, interagency competition, and the elimination of deficit services, the pricing system advocated is not clear to me. He hails incremental costs as a reference but certainly does not propose marginal cost pricing. Nor does he espouse setting rates on the basis of fully allocated costs. If he is arguing only that pricing authorities have been so engrossed in demand and discrimination that they have lost sight of the realities of costs, I am in full agreement. But I would urge that recognizing the validity of costs as a price determinant is consistent with discrimination and classical rate theory. In its theoretical formulation, price discrimination is effectuated by equating MR and MC in markets separated on the basis of differences in demand elasticity. In traditional rate theory, it means maximizing the contribution to overhead. Clearly, discrimination cannot be an effective pricing vehicle without appropriate consideration of both incremental costs and demand.

The plea for the abandonment of discrimination appears generally to rest on two basic propositions: (1) cost pricing would produce better financial results for the railroads, since discrimination has priced them out of many markets, and (2) cost oriented pricing is a requirement of efficient traffic allocation and competitive stability. But perhaps the need is not to abandon but to appropriately apply discrimination. Discrimination is not, to be sure, socially acceptable in all its manifestations; it can lead to economic waste and injustice. But viewed from the standpoint of the railroads as a system, a case can be made for rate differentiation among commodities and the place discrimination occasioned by interagency competition.

At least partly because of regulatory restrictions on rate reductions, many "paper" rates have eroded railroad traffic and revenues, most commonly where demand curves have been flattened by highway carrier substitution. But recognition of the possibility of revenue expansion through rate reductions warranted by out-of-pocket costs is not the equivalent of cost pricing nor the rejection of discrimination. Rather, a sound application of traditional rate theory is needed, recognizing the altered slope of these competitive demand curves and gearing overhead contributions to the changed market facts.

But potentially as serious for revenue production is the distortion of upward discrimination. While some railroad demand curves have been flattened by carrier substitution, others have shifted to the right as a reflection of recent great expansion in economic activity and total traffic movement; failure to reflect in prices either of these changes limits railroad financial prospects. In one case, paper rates are the symptom of the disease; in the other, the specific symptoms are not so apparent, but the organic defect may contribute just as much to the debilitation of the patient. Because of serious imperfections in transport competition, maximum rate control is essential, but maximum reasonableness should be judged with reference to demand conditions rather than historic relationships.

Subject to restrictions on monopoly exploitation necessitated by market imperfections which cannot be developed here, a rational application of discrimination would provide a more explicit determination of the level of railroad earnings and investment that the market will support. Restricting by public prescription revenue opportunities from both reduced and increased rates, we are caught in a basic dilemma. With rates of return generally regarded as inadequate for the railroads as a whole, it is impossible to determine whether or the extent to which portions of the rail plant are inherently uneconomic and should be written off. With one hand we restrict revenue maximization and with the other attempt to devise and implement controls of competition which will shore up transport industries and improve railroad return rates. This is a wasteful and uncertain approach to the problem.

I do not believe that the results of such a maximization process do violence to a reasonable allocation of resources into transportation or among the transport industries. Assuming that regulation adequately performs its historic function of preventing monopoly profits, there is a good case that the traffic and revenues the market awards the railroads provide an adequate guide for channeling resources into this industry. If the net revenue maximization

process yields TR < TC (including a return on investment), the market refuses to support the overstated plant valuations. If present public aids policies to competing agencies are accepted as a datum, the answer lies in financial reorganization, consolidation, contraction, general rationalization, and a new overhead cost reference. With the financial stringency traceable to competitively flattened demand curves over substantial ranges of traffic, the services abandoned in the rationalization process would include those for which the railroads did not have the "inherent advantage." The long-term result would be a new pattern of prices with TR = TC.

Perhaps discrimination does not offer a perfect answer to this complex problem of inherent advantage and traffic and resource allocation. But apparently perfection in this vexing area is a lifeless dream. So far as interagency traffic allocations are concerned, it might be possible to introduce refinements to tie competitive rates more closely to marginal costs. For example, in a competitive situation subject to litigation, the controlling carrier might be considered the one with the lowest marginal costs. Discrimination having fixed his P/MC relationship, competing carriers might be required to observe the same P/MC ratio.

Nor do I believe that discrimination is inconsistent with competitive stability in a multiple-agency setting, requiring mooring rates to some measurable cost anchor. Reciprocal and progressive rail and motor rate reductions made by each to get more business are a cause for alarm by opponents of proposals to liberalize interagency price competition, fearing that such reductions would force all "competitive" rates to out-of-pocket cost levels and gratuitously erode revenues of both sets of carriers. With rational discrimination this concern appears unwarranted. Assuming negatively inclined demand curves and the objective of profit maximization, the best competitive rates are not pegged only nominally above out-of-pocket costs to get the maximum traffic consistent with some overhead contribution.

Much of the discussion of interagency competition suggests that negatively inclined demand curves are not common in competitive markets. One is led to believe that for broad categories of traffic it is "all or nothing," where x rate attracts all of a static quantum of traffic, x minus 1 gets no more than x, and x plus 1 moves none. But it seems more reasonable that progressively lower railroad rates continuously alter traffic allocation between nonhomogeneous agencies and stimulate additional total movement. Because of differences in business circumstances, habits, and subjective evaluations, all shippers do not have the same critical rate at which they will substitute one service for the other. Sloped curves are confirmed by unpublished research of the Traffic Executives' Association of the Eastern Railroads. Comparisons of several commodities show larger traffic shares associated with more favorable rail-motor rate relationships.

Professor Healy suggests that in railroad pricing primary emphasis is on maximizing revenues and traffic rather than profits. To the extent this is true it must reflect mistaken judgment, correctable by better fact finding. Such policies

would hardly be approved by stockholders; nor should they be sanctioned by the Commission, since they contribute to financial stringency and encourage the regulatory complications brought on by low return rates.

With negatively inclined demand functions and the profit-maximization goal, why should either pricing center in a multiple-agency situation reduce rates gratuitously? If rates are appropriate to out-of-pocket costs and demand curves, each agency is maximizing the overhead contribution and lower rates would by definition yield smaller nets. Furthermore, the opportunity for broad-scale reductions on intensely competitive traffic is limited by the overhead contribution recoverable from the noncompetitive traffic. Rates that can be assessed on the latter are just as rigidly governed by demand as are those of the competitive services. Carrier substitution is only one of several determinants of transport demands, which are not uniformly inelastic for noncompetitive services. An examination of available empirical evidence tends to confirm this proposition. During the postwar years the relative burden contribution of manufactures, where truck competition is keenest, has tended to increase.

Correctly applied, old-fashioned rate theory supplies many answers to difficult problems of traffic and investment allocation. Despite my comments regarding particular avenues of approach, I suspect that Professor Healy and I are not too far apart on fundamentals. We would certainly agree that railroads should keep a close ear to costs to detect opportunities for profitable rate reductions and incentive applications. Certainly efficient resource allocation is not served by pricing policies which deprive the railroads of traffic which they should be handling on the basis of their incremental costs.

But as suggested in each of the principal papers, economically sound pricing by transport agencies cannot achieve efficient allocations with erratic pricing of publicly-provided facilities. Mr. Dearing has enumerated many weaknesses in pricing the services of both toll and general highway facilities. The toll systems have failed to develop techniques to assess revenue responsibility appropriately to commercial and other users. This defect is compounded in the general system by the inability to determine optimum investment in specific facilities. Mr. Dearing noted several reasons for this failure and suggested that progress is being made. Certainly one of the cardinal sins is the tendency to regard the highway system in a vacuum rather than explicitly as a part of the nation's transport system, which is particularly serious at this juncture of unprecedented highway expansion.

The new long-range development program is rooted in traffic forecasts that are largely extrapolations of the past. Forecasts generally are biased by recent trends which suggest that commercial highway transportation will capture "more than its proportional share" of anticipated intercity traffic volumes. Such an assumption may very possibly be negated by changes in railroad pricing policies or by such innovations as piggy-back which could reverse recent trends. With such economically warranted and highly possible developments, the current investment program may result in serious overbuilding.

Relevant for highway planning is the whole gamut of transportation economics, including particularly the issues discussed in all of the principal papers.

With present diversionary trends halted or reversed, the investment required to accommodate future highway freight movement may be badly overstated, causing not only overinvestment in facilities, but further allocative distortions. Assessing the incremental costs intended for one level of commercial vehicles against a smaller number would overburden the traffic and cause an unwarranted diversion away from the trucks. Despite the theoretical superiority of cost-based user charges that Mr. Dearing indicates, it may be more desirable in this event to emphasize the benefit approach in assigning responsibility to commercial users, if the neutrality goal is paramount. If this approach overburdens private auto users on the basis of equity tests, a good case might be made for paying for the planning mistakes from general revenues.

Mr. Dearing has indicated the crucial role of traffic engineers in rate setting and other essentially economic tasks. The isolation of highway planning is a manifestation of this delegation. Much of the fault, however, lies with economists who, with a few outstanding exceptions, have failed to give important questions in highway economics the attention they warrant. Let us hope that economic training and thought will be brought to bear full force on these pressing problems.

JOHN W. BARRIGER: We have just had the privilege of hearing what deserves to be termed a "state paper" on transportation. It should be required reading for all who make or administer laws relating to regulation or promotion of transportation or who are directly affected by the actions of the public officials engaged in the former activities.

Probably the principal purpose of appointing a discussant is to have a critic or "devil's advocate" on hand to take issue with at least some of the views that have been expressed and to amplify such parts of the subject matter as may not have been adequately developed.

The general excellence and high degree of scholarship that is clearly apparent in Professor Pegrum's observations on "Investment in Transportation Industries under Regulation" removes any possibility of following this conventional pattern and instead converts my assignment into the pleasant responsibility of pointing out what has already been manifest to you that an unusual range and depth of comprehension of the subject has been displayed in his dissertation. A very involved subject has been covered effectively within a brief compass of pages and time. The speaker has evidenced both a penetrating understanding of the question and unusual literary ability in the manner in which he has locked a series of difficult and complex subjects in a sequence of clear, concise, and convincing paragraphs.

Notwithstanding these qualities, the closely packed content of the paper makes it one that requires—and deserves—careful reading and rereading—

with close study—to supplement the author's oral presentation. Only in this way will his audience extract an adequate proportion of the information and understanding that has been compressed into the manuscript. Your discussant has had the advantage, over this audience, of having been in possession of a copy of the paper for several weeks; so has been able to do that.

Like many of you, I have the habit of underscoring significant observations and comments. After my third reading of Professor Pegrum's paper, virtually every line is marked except those containing statistical and other data with which I have been familiar. Seldom does one find a paper in which every sentence possesses such content and importance. Nearly every line could well serve as the text of a paper in itself.

Opening with a reference to "the impact of institutional arrangements on the development and structure of the component industries of transportation and the reciprocal impact of technological development on those institutional arrangement," Dr. Pegrum proceeds to call attention to the mixture of private and public investment and the conflicting idealogies, policies, and purposes related to each. These illogical combinations have produced the nation's present transportation problem. One of its many adverse manifestations is the requirement of greater sums of money to provide the fixed facilities and operate all of the movable equipment than would be sufficient for the same quantity, and a better quality of service, under wise public regulatory and promotional policies.

The railroads are the principal character in Professor Pegrum's paper for they constitute the "hard core" of the transportation problem. The unsatisfactory status of the former is evidenced by the the absence of dynamic growth of the industry as a whole, commensurate with the national economy and the problem of the generation and procurement of capital sufficient to integrate modern technology adequately into these properties. The cause of this is overregulation. That was brought about by the series of amendments to the ICC Act, or its predecessor, the Act to Regulate Commerce, between 1906 and 1920. These gave the Commission complete rate-making powers by authorizing it to set maximum and minimum and absolute rates and to suspend rates. It will be remembered that the original Act of 1887 limited the Commission's powers to voiding rates found to be prejudicial, discriminatory, or unreasonable.

The result of conferring these powers on a regulatory body made it a price-fixing body, establishing the charges made by the largest single component of the transportation industry but with the remainder of its carriers, public, contract, and private, under lesser degrees of regulation or none at all.

The power to fix the prices differentially charged by competitive industries actually allocates their markets whether this is the stated purpose of such actions or not. That has inevitably become the result of the present form of the ICC Act. Allocation of markets is the function of cartels. It was certainly not the intention of Congress to create an interstate commerce cartel even under public authority, but that is what has occurred.

The Commission's original, limited powers held its activities to the role of an

umpire. It could require fair play but it could not control the outcome of the play. After 1920, it ceased to be an umpire but became the most important player with the power to determine, in effect, which side shall win and which side shall lose each play (in this case the play is the traffic).

While Professor Pegrum points out that the Cabinet Committee Report did not cover some important aspects of the transportation problem, nevertheless it did clearly focus public attention upon the greater public interest in common carrier than private transportation and the urgent necessity of letting competition rather than regulation establish prices. Competition, not regulation, would therefore allocate markets and establish levels of earning power in a manner which follows the orthodox principles of the private enterprise system that has given this country its tremendous economic power. The Commission would remain as an umpire but not as the principal player.

Overregulation deprives the railroads of traffic and earning power while at the same time forces the diversion of traffic to subsidized agencies of competition, which, with the exception of pipelines, are generally less efficient users of capital and producers of service than the mass-production railways.

The loss of traffic and the inadequacy of earning have combined to retard seriously the rate at which technological progress can be integrated into railway plant and equipment; and in fact have forced a concurrent liquidation of plant and equipment capacity and of services which is continuing at an accelerated rate. Great segments of railway property are not being maintained on a basis which restores each year the equivalent of the service life dissipated through usage and the elements.

Railways being the only functionally and geographically complete agency of mass transportation, it is reasonable to assume that the economic development of this nation which advances through mass production and mass distribution would be strengthened through developing these carriers to be fully representative of the highest standards of service and efficiency which the most effective combination of technology, capital, and management can provide.

This will be impossible of attainment so long as overregulation makes a transportation cartel out of the Interstate Commerce Commission and deprives the railroads of traffic and earning power. Our great respect for the individuals which comprise that organization and recognition of their high-principled, earnest, and industrious efforts must not dull our realization of the basic fact that the ultimate liquidation of the railroad industry as a private enterprise, both physically and financially, will be the inevitable result of many more years of the overregulation. These carriers must be given enlarged freedom of opportunity to provide competitively successful services at competitively successful prices. Remember always that "regulation dulls the spirit of enterprise."

The "railroad problem" (and there are a sufficient number of "problem railroads" to make a "railroad problem") and the "problem railroads" are the result of overregulation. Overregulation of railroads is the most serious internal economic question confronting the nation at the present time. It is therefore highly important that this matter should engage the continuous attention of the

nation's foremost economists—who are your members. Your membership is fortunate that this vital subject has been so completely, clearly, and effectively reviewed as Professor Pegrum has done for you. His paper will stand as one of the landmarks of your 1956 conference and a source of continuous enlightenment to all who will turn, as many will in future months and years, to study it in the pages of your *Proceedings*.

Professor Pegrum has just made an important contribution to the thinking of the nation as well as to the proceedings of the American Economic Association.

#### SOCIAL SECURITY AND WELFARE

### SOCIAL INSURANCE: A PROBLEM IN INSTITUTIONAL ECONOMICS

By J. Douglas Brown Princeton University

Few areas of inquiry in the field of economics demonstrate more clearly the importance of an institutional approach to the discipline than the area of social insurance. At a time when one wing of economics is finding more and more uses of mathematics in the development of the theoretical analysis of the behavior of markets and prices, another wing, more concerned in the role of the human factor in the economic equation, is seeking the aid of the full spectrum of social science to discover the interrelations of economic policy and the enhancement of our way of life. It is good that this is so.

The traditions of the discipline of economics are broad enough and deep enough to encompass a widely varied attack upon the essential problem of how man organizes his productive efforts to assure the best possible livelihood for himself and his fellows. It is a matter of personal taste and predilection whether one prefers to analyze by the most precise methods the operation of any or all measurable phenomena or to range more widely in the exercise of both analysis and judgment in developing new structures and devices for the improvement of the economic machinery of our society.

The economist with a mathematical bent warms to the deductive process of a tightly reasoned demonstration from assumed economic premises. If the premises are approximations of reality and the deductive process is sound, results of much value to understanding are achieved. As in all scientific proof, however, the essential consideration in the evaluation of results is in large measure aesthetic. Is the solution neat and tidy? Is it beautifully symmetrical and simple? Does it "click" into place and fit situations other than those used in the demonstration? On the assumption—the basic faith of all scientists—that this is an orderly world, such an aesthetically satisfying solution may reveal truths of far-reaching application. They may eventually change the premises of all future policy.

The economist who by predilection moves outward into the world finds the very complexity of social, economic, and political forces exciting. He enjoys the inductive process of absorbing, weighing, blending, and building a multitude of items of evidence into a more or less definite picture of truth. If he is passively inclined, he stops with such a picture. He may be content to be an economic historian, even of the current scene. Others are led by the zeal for action to convert judgment into policy—new policy to improve our way of life. They become what might be properly called political economists.

The test for continuing membership of the political economist, thus described, in our honored profession is not the precise tools he uses to arrive at propositions of economic importance, but rather that he studies all available evidence, freely, thoroughly, and effectively, by those tools most appropriate to the evidence. This opens up for him the vast range of disciplined analysis which has been developed by historians, political scientists, economists, sociologists, and social psychologists. He may even find helpful approaches, not in mathematics alone, but in the whole range of science. Perhaps most telling of all will be those highly suggestive insights which he may gain from great literature and philosophy. The mathematical economist may profit most by intensive concentration in the depth of his subject—a thrilling experience for many able men. The political economist must ever broaden his area of interest and continue a kind of adult liberal self-education reaching out from his central interest and objective.

With acknowledged bias, the writer would like to demonstrate the nature of the work of the political economist by marshaling certain unsolved problems in an important area of public policy: social insurance. It is believed that such a demonstration will not only indicate the variety of evidence and approaches necessary in the attack upon such problems—and thereby support the conclusions made above—but may also encourage some younger economists to leave the ivory towers of deductive analysis and venture forth into the rough and ready life of an economic frontiersman, where the rifle and the ax may be more appropriate tools than the slide rule.

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The unsolved problems in social insurance policy which follow are purposely chosen to be typical and varied rather than necessarily the most pressing in importance in every case. To make each problem more meaningful, some considerations, often contradictory, will be outlined. In some cases, the writer will offer a judgment as to the better solution of the problem. But it must be noted immediately that such a judgment is ever subject to change in the light of newly acquired evidence.

#### I. Does Social Insurance Protection Enhance or Reduce Worker Motivation?

vIt is vital to continued progress in a free, competitive economic system that government enhance rather than attenuate the normal drives of the individual to improve his livelihood, so long as these drives are

legitimately exercised. It has been proved time out of mind in history that response is more effective than command in raising the level of production in a society. No institutional factor should be superimposed by government which, on net balance, reduces rather than enhances motivation. This is a core problem.

Social insurance in the United States has evolved as an extension of the differential wage system. To the extent that benefits are related to wages, the motivation to increase the rate and regularity of earnings is carried over into the social insurance system. This is in sharp distinction to relief payments which are related to need, not past earnings. It is also to be distinguished from flat benefit systems used abroad. If benefits under the system vary in any reasonable degree with earnings, the motivation inherent in the wage system should at least not be attenuated by the social insurance system.

But it may be argued that a reduction in the degree of risk faced by the wage earner on the introduction of a system of benefits (particularly unemployment benefits) reduces his motivation to retain employment or seek new employment when laid off. The problem of the planner of social insurance is to so relate benefits to normal earnings to afford reasonable protection without reducing motivation in any serious degree. This becomes a problem in which psychology, economics, and public administration must be joined in seeking a solution. The solution will not stay put as conditions change and any solution will be a compromise. But the significant point is that there is an increasing body of evidence which on thorough analysis suggests sound policy. We no longer need to guess:

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At a more philosophical level, a good deal of thinking has been done on what constitutes the object of worker motivation. We are learning that security is a goal as well as a support. There is in most normal individuals a striving to attain a higher and higher level of security. As the level of education and foresight increases, the three-dimensional quality of rewards for sustained effort become increasingly important. Witness the rapid extension of fringe benefits in both progressive companies and in union contracts. Many such benefits provide elements of security. They make the reward for effort a more attractive package than if current wages alone were afforded.

The nub of the problem is whether the reward of a higher level of security is realistically related to the greater quantity or quality of effort contributed. This is a psychological problem and not a mathematical one. In private benefit programs, differential benefits can be carried to high ceilings. Unfortunately in social insurance in the United States, a sound policy of differential benefits has been limited in application at the upper ranges by ever present political considerations.

#### II. What Should Be the Proportionate Cost and the Proportionate Benefit Under Social Insurance Programs Compared to Normal Earnings?

Under private benefit programs, the answer to this question might be readily developed. An appropriate level of benefits might be one-half of normal earnings. The cost of such a level of benefits can be computed in actuarial terms and the resulting figure applied in the individual case. This is an example of clear-cut equity. But even in the most orderly of private firms, such equity in its pure or raw state is seldom applied. An employed group is a social entity in which old and young, the higher paid and the lower paid work in close association. Some who are older cannot afford to pay the costs of the level of benefits established and vet will soon need benefits of at least that level. Others have a long span of contribution ahead or are less likely to become eligible for benefits for some time. In the light of this complex situation, the employer, recognizing the need to favor group morale rather than individual equity, serves to attenuate the extremes of differentiation. In private retirement annuity programs, minimums and maximums are established, accrued liability is absorbed, and guarantees given. This is but the recognition that economics must adjust itself to social psychology and to certain well-tested attributes of social groups.

In social insurance programs, this balancing of equity and adequacy must be carried further than in private company programs. It is easy to see that the goal of differential benefits as a reflection of differential effort is compromised to some extent by the need to recognize a group interest in adequacy. Fortunately in the United States, the proportion of normal earnings required to assure adequate minimum benefits is sufficiently modest to permit a large part of total contributions (employee and employer combined) to be used to sustain differential benefits above the minimum. We have, however, departed markedly from any premise of paying benefits equal to approximately one-half of lost earnings, even within the bracket of earnings covered by contributions. The problem remains for continuing study and political debate whether the existing proportionate contributions as opposed to graduated levels of benefits are in sound balance. The politician may be content with a pragmatic solution. The political economists cannot get off so easily.

## III. What Is the Appropriate Area of Operation of Social Insurance as Contrasted to Needs-test Relief or Self-support?

VI'he simplest definition of the area of operation of social insurance can be based upon the premise that it is an extension of the wage system. It can be argued that social insurance has the function of making the

wage system workable in an economic system with inherent qualities of fluctuation and mobility and in which individuals become old, disabled, and unemployed. The individuals who are dependent upon the wage system to support themselves and their families are assumed to be in the labor market. But when is a person in the labor market? This is a tough problem which no single discipline can solve.

In the area of social insurances related to life risks such as death, dependent old age, or permanent and total disability, a historical test of past participation in the labor market is available. Employment at minimum earnings for minimum periods within a zone of time can be used to establish a workable test. But in the area of current risks covered by social insurance, such as unemployment and temporary disability, the historical test falls short. It can be used to establish eligibility at the onset of the contingency but it may provide no effective check on continuance in or re-entry into the labor market on the part of the beneficiary. There is also the problem of whether the individual has ceased to be "marketable" or whether a market exists.

There are many type illustrations of this problem of the relation of the beneficiary of term social insurance and the labor market. The following may be suggested: (a) a married woman establishing eligibility for unemployment insurance benefits in seasonal employment does not seek regular employment; (b) a skilled worker laid off on the closing of a plant refuses to seek employment except in an occupation no longer in demand in the community; (c) a worker disabled by temporary illness loses his incentive to secure regular employment; (d) a community undergoes the loss of its principal industry with little likelihood of replacement. These illustrations are sufficient to indicate the tenuous line between the economic and the psychological factors which arise in applying the test of continuance in the labor market in social insurance. The practical answer has come to be to apply whatever tests of attitude may be readily at hand, such as the offer of reasonably suitable jobs when available, and to permit the exhaustion of benefit rights to do the major task of clearing the rolls of those leaving the labor market.

## IV. What Is the Proper Role of Employee Contributions in a Social Insurance System?

The obvious answer that employee contributions are intended to spread the cost of social insurance benefits is far from sufficient. If the objective to spread cost were the exclusive goal, the use of a general income tax would be more effective. Also, there are many problems for the economist concerning the effective incidence of payroll

taxes. There is little certainty even in a relatively static situation in respect to the degree of shifting of the tax. The considerations involved in a policy of employee contributions include more than those narrowly economic in nature. They include basic attributes of individual and group psychology.

Mt is a normal expectation in human experience that benefits involve sacrifice and that rights involve obligations. This is true in both the economic and the political spheres of life. A benefit gained without contribution is almost sure to be undervalued. Differential contribution for differential benefit pervades the whole market structure in both goods and services. Why should it be expected that individual attitudes toward social insurance benefits be different? Even highways are now divided between toll and free.

Mot only does contribution on the part of the individual tend to enhance value, but by a subtle psychological interconnection it tends to enhance responsibility. A person feels an interest in something in which he has invested and from which he expects to benefit, whether it be a home, a car, a church, or an operating system. He will be disposed to object to waste, inefficiency, or abuse which affects the object of his interest. The accumulation of individual interests becomes reinforced when they merge into a group interest with articulate expression by the natural leaders of the group. By this process, a psychological reaction of the individual leads to political responsibility in the general citizenry when individuals contribute directly and specifically to their own protection.

This justification of employee contributions in social insurance in psychological and political terms may be questioned by the economist who wants to keep things simple and logical in economic terms. But an institution as complex as social insurance will not stay simple. It perversely wanders through the whole maze of social science and the ramifications of public administration. An interesting question for future debate is whether unemployment insurance in this country would be better administered today if the principle of employee contributions had been universally accepted and sustained. Another question is why cannot income tax legislation be designed to avoid discouragement to the survival of the contributory principle in all forms of benefit programs?

# V. How Much Does a Social Insurance System Contribute to Reducing the Amplitude of Economic Fluctuations?

In the early discussion of unemployment benefits in this country, there was much talk about stimulating the employer to stabilize employment in his firm. The concept of prevention of lay-offs was developed from that of preventing accidents under workmen's compensation insurance. From this transposition of concepts, the justification of merit rating under unemployment insurance arose. Even the devastating effects of a serious depression failed to diminish the faith shown in the efficacy of the concept. It is true, however, that many converts in industry had their faith supported by a strong direct interest in a low rate of contribution determined more by the nature of their business than by any added incentive to stabilize.

Whatever slight effect merit rating under unemployment insurance may have had on the prevention of lay-offs, the far greater impact of this and other social insurances on the fluctuations of business must be sought on the side of benefit payments. It is significant that, in this respect, unemployment insurance has a close parallel in old age insurance. So long as eligibility for full old age insurance benefits is related to withdrawal from the labor market, there will be a very considerable fluctuation in the volume of benefits paid according to the extent to which withdrawal is encouraged or discouraged by the state of the labor market. In times of good business, retirements are delayed or re-employment sought; in times of bad business, employers may lay off older workers eligible for benefits and favor younger workers in filling their needs.

A question for study might be: How much does the varying volume of benefit payments tend to compensate the variations in the volume of wages paid? To be of most interest, such a study should be made in an industrial area in which eligibility for social insurance benefits is high when lay-offs or retirements occur. The statistical series which would result from such a study might be suggestive, but they would be far from indicating the whole effect of social insurance benefits upon business conditions.

More subtle than the effect of an increased volume of benefit payments in time of business recession upon the total purchasing power available is the effect of the assurance of benefits, if needed, upon the individual consumer. There has been much discussion of the role of confidence in the decisions of the business enterpriser. Does the availability of social insurance benefits have a real effect upon the confidence of the wage earner-consumer as he makes his decisions to embark upon commitments to pay for the host of items now offered for installment purchase? To answer this question would require techniques in the area of social psychology.

Apart from the fluctuations of social insurance benefit payments and their availability to the individual when most needed is the mounting volume of long-continued payments to retired workers and survivors. When permanent and total disability benefits are paid, they will add to this continuing flow. Unlike the return on investments, such regular payments will almost entirely find their way into immediate use in the purchase of consumers' goods and services. In the olden days, the rich old lady in Boston was a steadying influence on the economy of that city. Perhaps we have created a few million counterparts, much lower in income per individual but accumulatively far more effective.

The foregoing examples of problems for study in the field of social insurance are sufficient to indicate the need for the more inclusive approach of institutional economics to make progress in this field. It may be argued that, like the famous Powder River of the West, such an approach becomes "a mile wide, an inch deep, and runs up-hill." Granted, there are grave dangers of superficiality in institutional economics just as there are the dangers of artificiality in mathematical economics. But the problems of the world await analysis and, for some, the satisfactions of aesthetic proof do not compare with those of participating in the development of effective public policy.

It must be added that in the case of social insurance, the political economist in his institutional approach is dealing with an area of economics which is only now coming into its own. This is the study of the enhancement of human resources as the most precious ingredient in any economic system, not land, capital, or labor (in the old sense of purchasable services), nor markets, prices, or credit. Because the individual is the end of human activity, the economist has tended to leave him to the humanist, on the one hand, or the psychologist, on the other. But the individual and any aggregate of individuals is the most subtle and the most critical element in the economy of a firm, a community, or a nation today. They make prosperity possible, and national security sure. If badly used, they make poverty and war inevitable.

The study of human resources, whether in the U.S.S.R. or the U.S.A., may help determine which of these two great institutions will survive. Such study is challenging enough to make one willing to work with less exact tools, if there is promise of progress toward new knowledge.

### TRENDS IN PUBLIC WELFARE AND THEIR IMPLICATIONS

By Ida C. Merriam
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All societies have had to deal in one way or another with the basic needs and problems that give rise to what we identify as public welfare or social welfare measures. The old, the young, the sick and disabled share variously in the common abundance or poverty. Medical knowledge and skill are made available widely or narrowly. The accumulated learning of the group is passed on and expanded. The homeless, the deviant, the maladjusted are cared for in some fashion. In all societies, furthermore, these tasks are shared—in widely differing measure—by several kinds of institutions: the family, the local community, religious organizations, craft or guild, other types of voluntary associations and governmental agencies.

Social welfare programs embody a large part of the drive in modern society for social justice, for "fair shares," as they have done in earlier societies. The significant new elements are that industrialization and expanding productivity have made social welfare a feasible and realistic political goal and the extent to which the actual functioning of the economy now depends on such programs and can be affected by the way in which they operate.

Over the past fifty years—and markedly since 1935—there have been in this country important changes in the content of public welfare, in the methods of public welfare, in the levels of government involved, in the magnitude of expenditures, and in the relation of public and private activities in the field. The nature and the implications of these trends are best seen in relation to the major program developments.

### Social Insurance and Other Income-maintenance Programs

First and probably most important is the growth of social insurance. The development of social insurance made possible the shift from status to contract in social welfare. A highly industrialized, urban economy needs an institutional mechanism through which income is channeled to nonworking groups analagous to and paralleling the wage market mechanism through which income flows to earners. Social insurance represents both a response to and a reinforcement of several characteristic features of an industrial economy: the greater individualization of life patterns, the mobility of the population, the wide areas of consumer

choice, and the importance of a sustained flow of consumer income and purchasing power. In practically all countries, social insurance has begun as a program for special groups—those first drawn into the wage economy and made dependent on a cash income. Historically, the first type of social insurance to be adopted in almost every country has been workmen's compensation or employment injuries insurance. In other words, insurance against the risk most clearly associated with an industrial economy. The inevitable trend, however, is toward an increasingly broad coverage both of population groups and risks.

In this country, the special cash benefit program for veterans developed well in advance of the general social insurance program and continues to have a much greater importance than in most other countries. In part this may reflect the earlier stage in our history at which we made use of nonprofessional citizen armies. There were retirement systems for some state and local government employees before 1900. Workmen's compensation, beginning in 1908 for federal employees and 1911 for industrial workers, was in effect in all but eight states by 1920. The great increase in social insurance programs, of course, came after 1935.

Between 1935 and 1955, expenditures for social insurance increased almost thirty fold in dollar terms, over ninefold when corrected for price and population changes and more than fourfold as a proportion of the gross national product. Because it will be some years before as many as 90 per cent of the persons reaching retirement age have insured status under old age, survivors, and disability insurance and because the number and proportion of older persons is growing, one can predict that social insurance payments will continue to increase in absolute magnitude and for a time at least as a proportion of national output even without any further changes in the programs. The longer run relation between social insurance payments and either gross national product or personal income involves major uncertainties. The most important revolve around the question of benefit levels.

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If we have not entirely solved the problem of maintaining a balanced and sound relationship between earnings levels and rising productivity, we are at least fully aware of the importance of this relationship to the functioning of the economy. There is much less awareness of the parallel problem with respect to social insurance. It would probably be widely agreed that in social insurance the important element in the contract is not any stated dollar amounts but the relation of benefit levels to wage levels. But in practice we have not thus far found a technique for assuring a prompt adjustment in the dollar amounts written into the statutes, with the result that in workmen's compensation and unemployment insurance the stated maximum weekly benefit

amounts and in old age, survivors, and disability insurance the taxable wage base now hold the real benefits of the higher paid workers well below what was originally provided. Some countries, plagued most obviously by inflation, have provided for an automatic adjustment of social insurance benefits to the cost-of-living index. This may be a useful device but it does not meet the more basic problem of adjustment of benefit levels to real earnings levels.

There will always be room for debate as to just what share of the current national product or of increases in that product should go directly to the aged, the disabled, the unemployed, or survivor families. The development of social insurance as a distinct income distribution mechanism has brought this question clearly into the realm of economic discussion. What happens to benefit levels must now be viewed not only in terms of equity and social justice. Also involved are the economic stabilization potentials of the programs and the extent to which they encourage mobility of labor and a flexible adjustment to changing economic conditions.

Most current discussions of public welfare emphasize the decreasing role of public assistance. From one point of view this is a correct analysis. Old age assistance, in particular, is increasingly becoming supplementary to old age, survivors, and disability insurance. In mid-1948, 12.6 per cent of all persons aged sixty-five and over were getting old age insurance benefits and 20.7 per cent public assistance. By mid-1956, the insurance beneficiaries were 45.4 per cent of all the aged and the assistance recipients 17.7 per cent; furthermore, 3.8 per cent as compared with 1.2 per cent in 1948 were getting old age assistance as a supplement to their insurance benefits. When measured from the depression years as a base, the amount of public aid to needy persons has dropped dramatically. Including work program earnings, public aid in 1934-35 accounted for just under 6 per cent of the gross national product. Today public assistance takes less than 1 per cent of the national output. From another point of view, however, and starting a little further back, the important trend is the development of public assistance in its present form. The payment of a regular cash income to needy individuals and families—even though the amount is individually determined and subject to change for each appropriation period brings dependent families also within the scope of the money economy and into the general consumer market. Their situation is thus quite different than when the only public support was in the form of institutional care or rent and grocery orders. Although the movement for "outdoor relief" and for mothers pensions began early in the century and that for old age pensions during the twenties, neither had made much headway before 1930. It was the Social Security Act of 1935 and

its requirement that federal funds be used to match money payments only that led to the rapid development of the new program of public assistance.

While much of the present need for public assistance results from the lack of maturity of our social insurance programs, there are groups that social insurance as presently designed can never reach. More than half of the present aid to dependent children caseload consists of families in which need results from illegitimacy, divorce, separation, or desertion. We cannot hope to prevent such situations entirely, nor to remove all the other special and unpredictable causes of need.

Prior to 1930, the costs of public aid were borne primarily by the localities. In 1936, local funds financed 35 per cent of all public assistance payments, state funds 51 per cent, and federal funds 13 per cent; by 1955, the division was 12 per cent local, 38 per cent state, and 49 per cent federal. In spite of these shifts there are still large differences among the states in the adequacy of their assistance programs. In general, but only in general, these differences are associated with the average income level of the state.

Like social insurance, public assistance also brings into the realm of public scrutiny the question of the level of support of nonearning groups. Rising income levels for the population as a whole tend to result in a redefinition of subsistence needs but the process is slow and uneven. All states now have defined budgetary standards for determining the need for assistance. The standards vary greatly. Nevertheless, in September, 1956, there were eleven states in which assistance payments met only from 50 to 90 per cent of need as determined by the state's own standards.

An increasingly important reason why people turn to public assistance is the need for medical care. In 1950, the Social Security Act was amended to permit the use of federal funds to match payments made by public assistance agencies directly to vendors of medical care. The 1956 amendments provided special matching for such vendor payments. This departure from the "money payment principle" resulted from a recognition of the difficulty of including medical care in a regular budget, particularly a very small budget. Many public assistance agencies have found also that the available dollars can provide more adequate services if there are carefully worked out agreements with hospitals and doctors. It is probable that such organized arrangements result in a fairer—certainly a less arbitrary and variable—return to members of the medical profession for their services to the lowest income groups.

The 212 million dollars paid directly to providers of medical care by public assistance agencies in fiscal 1955 represented 8 per cent of all public assistance payments. Unless some other program takes over, medical care will probably come to loom still larger in relation to total public assistance expenditures—at least in periods of high employment—and there will be increasing pressure to provide medical care through the assistance device for the medically needy; that is, the large group of persons who have sufficient income to take care of their ordinary needs but cannot meet large and unpredictable costs of illness.

#### Health and Medical Care Expenditures

Major advances in health through environmental control have already been achieved in this country. Water pollution, air pollution, contamination from chemical and atomic products represent increasing hazards and the government is stepping up its expenditures for programs to control these newer threats of an industrialized economy. Without such measures and the continuation of other community health and sanitation programs, we would be in danger of slipping backward, but they cannot have the kind of dramatic effect on mortality and morbidity that resulted from public health activities in this country and Europe at the turn of the century and that are occurring in other parts of the world today.

Both for this reason and because of the tremendous recent advances in medical knowledge—much of which is only beginning to be applied in medical practice—personal medical care is again becoming the critical factor in the improvement of health. But these same advances have made of medical care a very costly service—in unit-price terms. They have also changed the basis of organization of these services. Modern medical care centers around medical institutions: hospitals, laboratories, diagnostic facilities, clinics of various types. Although the individual practitioner may remain an independent entrepreneur, he is increasingly dependent on institutional arrangements for the practice of medicine.

It is quite generally recognized now that the ordinary family budget does not have the stretch necessary to cover medical costs at the time they are incurred. Some method both of prepayment and of averaging costs is essential. Private insurance can make possible prepayment—although there is an important group in the insurance industry which urges that prepayment be concentrated only on the largest bills. Private insurance can also average costs among the members of groups all of whom pay the same premium. Whether it can meet the need for the entire population—with or without government subsidy—is a question on which there are sharp differences of opinion.

A significant amount of personal health care is being provided in this country today under public programs, with the costs averaged over all taxpayers. Long before environmental sanitation and com-

munity health activities assumed importance, the federal government had undertaken to provide medical care for two special groups: veterans and merchant seamen. State governments began to provide care on a major scale for persons suffering from mental disease and tuberculosis towards the end of the last century. Most large municipalities and many smaller communities have public hospitals. Public funds provide medical care for mothers and children through well-baby clinics, surgical and other services for crippled children, and school health programs—although the latter offer primarily diagnostic services. The growing volume of medical service under public assistance has already been mentioned. Public funds also support medical services provided through vocational rehabilitation programs. And a not insignificant amount of personal medical services are paid for through the workmen's compensation systems. State and local public health departments are increasingly providing personal medical care services such as immunizations, mass diagnostic testing, venereal disease control, mental health clinics—as part of their general health programs.

Public programs are providing an increasing proportion of all personal health services. In fiscal 1955, private expenditures for personal health services were 10.9 billion dollars, and public expenditures for clearly identifiable personal health services (not including general public health activities) were about 3.3 billion. Public programs thus provided about 23 per cent of the combined total, as compared with 17 per cent in 1940 and perhaps 9 per cent in 1929. It is of some interest to compare these figures with the proportion of all expenditures for personal medical care covered by private insurance. In fiscal 1955, private insurance payments were about 16.6 per cent of the total as against the 23 per cent from public funds. Private insurance and prepayment arrangements have, however, been increasing at a faster rate. Since fiscal 1949, the first year for which we have comparable estimates, private insurance payments have increased from 7.4 to 16.6 per cent of the total costs of personal medical care, while public expenditures have gone from 19.4 to 23 per cent.

#### Education .

Public education belongs in any broad grouping of governmental programs that are concerned directly with the economic and social well-being of individuals and families—as contrasted with government activities that promote welfare indirectly by enforcing law and order, fostering economic development, stabilizing prices, etc. In most other

<sup>&</sup>lt;sup>1</sup> In most discussions of private health insurance, its coverage is measured in relation to all private medical expenditures only. In fiscal 1955, private insurance covered 21.6 per cent of the private medical bill.

countries and in international discussions it is generally thought of as a social welfare measure.

The almost threefold increase since the beginning of this century in the proportion of the total national output devoted to public education (including veterans' educational benefits) reflects primarily changing concepts as to what education should encompass. Public education in 1890 meant essentially primary education. The great expansion of public secondary schools came after 1900 and public support for higher education reached significant proportions only after World War I. In recent years, the schools have provided increasingly specialized types of programs. The veterans' educational benefits enabled a record number of young persons to go to college. School construction, which lagged during the depression and war, has been greatly accelerated in the past few years, and salaries of educational personnel have begun to catch up with increases in average wage levels. These factors, plus the sharp increase in the number of school age children and the growing recognition of the importance of college, university, and adult education, seem likely to result in a further increase in the proportion of our total output used for public education.

### Other Welfare

Rounding out the picture of public welfare in this country are a number of smaller programs. Taken together they involved expenditures of about 1 billion dollars in fiscal 1955. Public housing, which in some countries has been an important part of the total effort of government to improve living conditions, in this country in fiscal 1955 involved net expenditures of only 88.6 million. The school lunch program used 238 million dollars of public funds. The vocational rehabilitation program has been growing rapidly, but in fiscal 1955 still involved expenditures of only 41 million dollars, of which 9 million went for medical care. Vocational rehabilitation services provided by the Veterans Administration (and included in Table 1 as veterans' expenditures) were as large (41 million dollars) as those under the regular vocational rehabilitation program. Something over 500 million dollars was spent for domiciliary institutional care. And the remainder went for a variety of protective and adjustment services: child-placing and adoption services, day care or foster care for children, juvenile delinquency programs, special services for the aged, standard setting and supervision of nursing homes, family counseling, and similar programs.

Institutional care was at one time a very much larger part of public welfare activities than it has been in recent years. The development of hospitals for the sick, social insurance and cash assistance payments for the old, widows and children, and needy persons and the sharp

Social Welfare Expenditures Under Civilian Public Programs as a Per Cent of Gross National Product, SRIEGTED FISCAL YEARS, 1890-1955

Programs	1890	1913	1929	1935	1940	1945	1950	1954	1955
Total social welfare expenditures Social insurance Public aid Veterans' programs Health and medical programs Other welfare Education	4.5 	2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	1. £ 5. £ 4. £ 5. £ 4. £ 5. £ 4. £ 5. £ 4. £ 5. £ 4. £ 5. £ 4. £ 5. £ 5	11.5 5.9 .7 .9 .3.2	3.8 3.8 6.2 2.9	6 6 6 7 7 7 7 7 7	2.9 2.9 2.3 8.2 8.3	2.3 1.8 1.8 8.3 8.3 8.3	25.7.7 2.9.2.9 2.9.2.9
Social insurance, public assistance and veterans' cash benefits.  Health and medical services, all public civilian programs**.  Education including veterans'educational benefits.	n.a. n.a. n.a.	n.a. n.a.	1.0	3.5 1.1 3.2	2.8 1.0 2.9	1.4	3.5 1.2 3.8	3.6 1.2 3.0	4.0 1.3 3.1
Gross national product (in hillions)	\$13.0 .3	\$36.0 1.0	\$104.0	\$68.7	\$95.7 9.1	\$218.3 7.9	\$263.0 23.8	\$359.7 29.2	\$373.1 32.5

\* Less than .05.

† Includes other welfare.

† Included with public aid. § Veterans' benefits include compensation and pensions, readjustment allowances and burial awards. Medical benefits under social insurance and

\*\* Includes health and medical programs and medical care under veterans', workmen's compensation, temporary disability insurance, vocational vendor payments under public assistance omitted.

rehabilitation, school health and public assistance programs.

Sources: For years 1935-55, Social Security Bulletin, October, 1956, pages 3-10. For earlier years rough estimates based on data from America's Needs and Resources (Twentieth Century Fund, 1955); R. A. Musgrave and J. M. Culbertson, "The Growth of Public Expenditures in the U.S., 1890-1948," National Tax Journal, June, 1953; Historical Statistics for the U.S. (U.S. Department of Commerce), and reports of official agencies.

decline in the number of orphans as a result of improving mortality have meant a lessening reliance on institutional care. We are now seeing a slight reversal of this trend.

The very existence of public programs of insurance and assistance brings to light the situations in which something more than a cash income is needed. Old age and survivors insurance is still a new enough program so that the great majority of old people on the rolls are competent to handle their own affairs. Increasing numbers are not. The social insurance system finds itself dealing with such problems when it looks for a "representative payee" to whom to pay the old age or survivor benefits. Because the average age of those on the old age assistance rolls is much higher and more assistance recipients than insurance beneficiaries are single or widowed, the problem of nursing home or other sheltered care is already serious for the assistance group.

For some groups the provision of special services in their homes may make institutional care unnecessary. Visiting nurse services are fairly well established in most cities; homemaker services are newer; such proposals as meals-on-wheels for the elderly or housebound are still largely in the idea stage. It is clear, however, that institutional care may be the only adequate way of providing for some old people or for disabled and maladjusted younger ones.

One type of public institution that would have been included in any discussion of public welfare activities thirty years ago is not included in the series used here; that is, penal and correctional institutions. With the possible exception of certain kinds of training schools, these seem more appropriately classified with law enforcement activities—whether they are humanely administered or not. The reason for the change in classification is significant for an analysis of trends in public welfare. In discussions written in the early thirties considerable importance is attached to the shift from the older terminology of charities and corrections to the newer concept of public welfare. Public welfare, however, is defined as the social work part of the government, and anything which social workers do under government auspices therefore becomes part of public welfare. Today, programs then no more than ideas have moved to the center of the stage and the definition of public welfare activities is more logically program centered.

Just as medical services are provided under other than specifically health programs, similarly social work services are today provided through school systems, through the veterans' program, in hospitals, and as an adjunct to other medical services, in connection with public housing programs, and as part of the process of administering public assistance. It is not feasible, however, to identify expenditures for such

services as was done in the case of medical care. Social work services are also associated with governmental activities other than those here classified as social welfare programs—for instance, probation and parole boards, domestic relations and juvenile courts, some types of recreational activities, some farm programs.

While social case work and counseling activities have up to the present remained largely a function of private agencies, such services are increasingly being developed by public agencies. There is a new interest in efforts to rehabilitate persons on the public assistance rolls who might be restored to self-support, through a combination of medical and counseling services. There is also a recognition that many families who do not need cash assistance do need help with other problems—whether of family relations, child behavior, or job adjustments. While the provision of more adequate housing, medical care, or incomemaintenance payments would prevent some of the problem situations from developing, they would not touch others. The reaching out of medicine into the field of mental health, the growth of the behavioral sciences, and the development of the social work profession are combining to give new stimulus to this kind of public welfare activity.

#### Total Expenditures

Even when broadly defined, social welfare expenditures under civilian public programs in the United States have never—except during the depression of the thirties—taken as much as one-tenth of the total national output. In 1934 and 1935, they represented between 11 and 12 per cent of the gross national product, with public assistance and work program earnings accounting for more than half of the total. In 1945, with a vastly expanded but war-stimulated output, social welfare expenditures accounted for 3.6 per cent of the total. By fiscal 1955—the latest year for which complete data are available—social welfare expenditures were up to 8.7 per cent of the gross national product. At the turn of the century, comparable expenditures had amounted to roughly 2.5 per cent of total output.

With all their expansion both in absolute terms and in relation to gross national product, social welfare expenditures nevertheless represent a somewhat smaller proportion of all government expenditures to-day than in 1929 or at the turn of the century (Table 2). Before World War I, veterans' benefits accounted for a substantial share of all federal expenditures. Today they and all other social welfare expenditures are overshadowed by military outlays and the many other programs which federal, state, and local governments have undertaken—such as agricultural price support, land conservation, highways and airports, in-

#### TABLE 2

SOCIAL WELFARE EXPENDITURES UNDER CIVILIAN PUBLIC PROGRAMS IN RELATION TO GOVERNMENT EXPENDITURES FOR ALL PURPOSES, AND TO GOVERNMENT EXPENDITURES FROM GENERAL REVENUES, BY LEVEL OF GOVERNMENT, SELECTED FISCAL YEARS, 1890–1955

	1890	1929	1935	1945	1955
Total government expenditures for all purposes:*					
Per cent social welfare	38	41	59.9	7.5	32.0
Per cent social welfare other than education	20	17	42.8	4.1	21.0
Total government expenditures from general revenues:					
Per cent social welfare	38	41	58.3	6.5	24.8
Per cent social welfare other than education	20	17	41.0	3.1	12.9
Federal expenditures for all purposes:					
Per cent social welfare	41	24	47.1	2.5	19.1
Federal expenditures from general revenues:	, .	ļ		-	•
Per cent social welfare	41	24	45.8	1.8	10.7
Per cent social welfare other than veterans	1	4	38.6	.8	10.7 3.9
State-local expenditures for all purposes:		_			
Per cent social welfare	36	. 47	72.2	66.8	61.5
Per cent social welfare other than education	10	15	39.1	25.0	26.4
State-local expenditures from general revenues:					
Per cent social welfare	36	47	70.3	63.6	56.7
Per cent social welfare other than education	10 .	15	36.8	21.1	18.9

<sup>\*</sup> Expenditures from general revenues and from social insurance trust funds (from federal budget and for 1929 and subsequent years from national income series of Department of Commerce, 1890, from sources cited in Table 1); the portion of workmen's compensation and temporary disability insurance payments made through private carriers was omitted in computing percentages.

† Includes expenditures from state accounts in the unemployment trust fund, but excludes

federal grants-in-aid.

‡ Excludes federal grants-in-aid.

creased aid to commerce and labor, support for scientific research, and so forth. Federal welfare expenditures, including social insurance, dropped as a per cent of total federal cash outlays, from something like 40 per cent in 1890 and 24 per cent in 1929 to 19 per cent in 1955. If we consider expenditures from general revenues only, the decline is from about 40 per cent to 11 per cent. State-local expenditures for social welfare, on the other hand, represent a much larger proportion of all expenditures from state and local revenues than was the case prior to 1930—62 per cent as compared with something like 36 per cent in 1890 and 47 per cent in 1929. Welfare programs other than education took about 10 per cent of state-local general revenue in 1890 and 19 per cent in 1955.

#### Summary

Looking back over the past fifty years one can see a number of different trends in public welfare. Overshadowing all others is the development of an institutional mechanism for channeling a regular and assured income to nonearning groups. As a result, public welfare (omit-

ting education, for the moment) has moved from an almost exclusive emphasis on the disadvantaged—or on special categories, such as veterans—towards a concept and programs that extend to the entire population. This trend has worked itself out more completely in OASDI than in other areas. Public assistance is still organized on a categorical basis—with federal financial support for designated population groups only. Public funds are supporting an increasing amount of medical care—as well as environmental health services—for persons in the general population. Public education has from the beginning been open to all children in certain age groups. The great expansion in this case has been in the age groups and the levels of education covered.

Interwoven with these trends have been the shift from primary emphasis on meeting current need to primary emphasis on preventing dependency, from relief in kind to assistance through money payments, and now, in a different context, a renewed emphasis on direct provision of services. The services have an increasingly professional character, although there is also a trend toward wider use of semiprofessional medical and other aids to relieve the more highly trained person of duties that can be carried by others.

In the field of income maintenance, the public programs have become the basic factor, although supplementation through private employee benefit plans is also on the increase. The proportion of personal medical care provided through public programs has increased, although it is still not quite a fourth of the total. The costs of public education have represented between 75 and 80 per cent of all expenditures for education in most of the period since 1929 except during the depression years when private educational expenditures fell off sharply. Private agencies still carry a very large share of the individual and family-centered adjustment services, but public agencies are giving increasing attention to the need for such services on a community-wide basis to help counter the isolations and the stresses of urban life.

The expansion of social welfare programs over the past fifty years has not resulted in a very great change in the relative importance of federal and state-local financing of such programs in the aggregate. At the turn of the century the responsibility of the federal government for veterans programs and of state and local governments for education resulted in a roughly one-third-two-thirds division of total social welfare costs. The addition of the national OASDI program, the expansion of veterans' benefits, and the use of federal grants-in-aid for other welfare programs on the one hand and on the other hand the expansion of public education, public health, and public welfare programs in the states resulted in a 40-60 division of the total costs in fiscal 1955. The

significant shifts that have occurred in financing have been those from local to state funds and from general revenues to earmarked contributions.

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The share of the national output used for social welfare programs has a little more than doubled since 1929. Total program expenditures, including administrative costs, represented 8.7 per cent of the gross national product in fiscal 1955. This is a measure of the resources used in the programs. In terms of goods and services made available to individuals, the cash payments under the social insurance, assistance and veterans' programs, plus the cost of personal health services, institutional care and education, represented 10 per cent of total personal income and 11 per cent of disposable personal income.

The implications of these trends are of many kinds. A few have been suggested in connection with the discussion of the major programs. In conclusion, one general comment may be pertinent. The growth of social insurance and the other social welfare programs has introduced a significant though relatively small new area of socially directed income distribution into our economy. Much more economic analysis is needed to lay bare the full implications of this trend and to make clear the conditions under which these programs can most effectively carry out their promises and contribute to a more equitable income distribution, to economic stabilization and continued increases in productivity, to the best use of scarce resources of human talent and professional skills, and to enhanced individual well-being. Recent trends in public welfare present both a challenge to social and economic accounting and a broadened basis for social accountability.

#### DISCUSSION

TAULMAN A. MILLER: Both of the excellent papers we have heard are problem-posing rather than problem-solving in character. This is not intended as a critical remark, for the careful formulation of issues and hypotheses is basic to fruitful research and analysis. Dean Brown has illustrated the complex character of policy decisions in the field of social insurance, and they are perhaps equally complex in the field of public welfare. As Mrs. Merriam's paper indicates, the perplexing and frequently controversial problems of intergovernmental relations are also involved in nearly all of our major social security programs. I am confident that few of those who have worked in the field of social security would question seriously Dean Brown's emphasis on the need for a broad inclusive approach. In developing his contrast between the techniques of the mathematical economist and the political economist, I am sure, too, that he did not mean to imply that the theoretical economist had little to offer. Certainly the techniques of rigorous economic analysis are highly relevant to the very important considerations of the impact of our social security programs on economic stability, productivity, and the like.

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Mrs. Merriam's paper, supplementing her valuable articles in the Social Security Bulletin and other publications, provides us with highly useful perspectives on our total social security program. Her paper, too, high lights the important and complex issues and points the way toward future study and analysis. Her careful summation of the record of public welfare expenditures provides the solid base for many kinds of policy decisions.

Both papers direct our attention to the need for careful consideration of the effect of our social security system—using the term to include both social insurance and public welfare—upon economic stability. Broadly speaking, we could agree that social security as an institution should be so constructed as to aid in maintaining economic stability and, in any event, should not contribute to instability.

In considering the relationships between social security generally—or any of its constituent programs in particular—and economic stability, we cannot stop with the analysis of the impact of benefit payments. Funds for benefit payments are derived from taxation and the type of taxes utilized as well as the magnitude of tax collections are important variables in the stability problem. It is the combined effect of benefit payments and tax collections that is important for economic stability.

It seems generally agreed that our unemployment compensation program is stabilizing in effect. This is obviously true on the benefit side, although limits on the duration of benefits and the effect of certain disqualification provisions would limit the program's contribution in the event of long-continued unemployment. On the revenue side, considerable attention has been given to the implications of experience rating for stability. I will not attempt to revive the long controversy over the effect of experience rating

upon individual employer efforts to stabilize their own employment. It seems to me that this effect has been negligible, particularly as it may relate to the broader question of stability in the economy as a whole. It has been contended, however, that experience rating tends to create perverse movements of the unemployment tax rate in relation to economic fluctuations. My colleague, Professor William H. Andrews, and I have attempted to demonstrate in a recent study of employment security financing that this contention is only partially correct. Short-cycle fluctuations in experience rates are significantly influenced by the lags in rate computations and by payroil variations as well as by benefit payments and have tended to be stabilizing in character in the past ten years. Over a longer cycle, however, rate changes may be perverse with respect to stability. On balance, although there are considerable problems of measurement, there seems little doubt of the generally stabilizing character of unemployment insurance—considering both the benefit side and the revenue side of our system.

The implications of our largest social insurance program, Old Age and Survivor's Insurance, for economic stability are more complex and considerably less certain. On the benefit side, we may well see some fluctuations in total payments similar to those in unemployment benefits, although the steady growth of the program has concealed variations that may have occurred in the past ten years. On the revenue side, OASI is financed by payroll taxes. Payroll taxes seem quite likely to carry a deflationary bias, especially when the proceeds are used in considerable part for trust fund accumulation. With the scheduled increases in OASI taxes, it will be a number of years before total benefit disbursements provide any net contribution to aggregate expenditures. The implications of the payroll taxes likewise complicate the influence of the old age and survivor's insurance system upon consumption. Benefit payments under OASI are transfer payments, but the transfers take place, generally speaking, between groups at fairly comparable income levels. They do not represent shifts of funds from high-income to low-income groups. This is certainly the situation as far as the tax on employees is concerned; and, if the commonly expressed view of the incidence of the payroll tax paid by the employer—that it falls largely on wage earners—is accepted, then the same situation prevails with respect to the employer tax. This is simply to say that the income effect of payroll taxes must be given important consideration in attempting to assess the stabilization potential of OASI. The impact of total OASI operations—tax collections and benefit payments—upon aggregate consumption propensities must be regarded as highly uncertain.

Payments to individuals under the various public welfare programs, as distinct from social insurance, may also have implications for economic stability. Substantial programs for the relief of unemployment are the most obvious example. But for all public welfare programs, the revenue side as well as the benefit side must be carefully analyzed and appraised in attempting to judge the contribution of these programs to general economic stability.

As Mrs. Merriam has pointed out, "the growth of social insurance and the other social welfare programs has introduced a significant . . . area of socially directed income distribution into our economy." In order to determine

the full economic significance of this development, we must concern ourselves with the sources of income distributed under social direction, and likewise evaluate the financing of social insurance and public welfare programs in relation to the broader problem of government finance in general.

Henry W. Steinhaus: After I had finished studying the two papers—which, by their depth, reveal the obvious qualifications of their authors—I started to wonder why, after nearly three-quarters of a century of social insurance in this world, it is still necessary to raise so many questions of really fundamental nature. Is it because only in more recent years we have learned enough about the operations of our economy to realize the complexities of measuring the economic effects of social insurance payments and contributions? Or is it because the social insurance created to cope with recurring depressions differs greatly from public welfare measures in an economy where full employment is guaranteed?

For instance, Dr. Brown mentioned the psychological effect of assured income maintenance on spending habits. This is of course only one of several new supports in the structure of individual security. There are the holdings of liquid assets, which strengthen the short-run security against income loss, and there is the belief in the government's long-range ability to maintain full employment, and these factors shape the consumer attitudes on spending, saving, and social insurance benefits. The consumer attitude in turn affects business planning and expansion.

It seems to me that we might obtain a sharper focus if we consider separately the problem of current distribution of funds and the problem of the long-term outlook. Mrs. Merriam gave us illustrations of that part of the national product which goes currently to the nonproductive group and the size of which is obviously dependent upon the willingness of the productive groups to surrender a share of their production for current consumption by others.

For the next decade, roughly five workers between the age of twenty and sixty-four have to support four nonworkers below and above these ages. Ten years from now the increased number of new entrances into the labor market, based on the high birth rates of the postwar years, will reduce the proportion to more manageable levels, provided we can find productive employment for the expanding labor force. Until then, in order to provide maximum use of the total funds available for distribution to nonproducers, the mechanism for income distribution through social insurance must be operated on a most efficient basis. This involves not only the consideration of motives and incentives mentioned by Dr. Brown but the integration of all kinds of welfare provisions to avoid overlapping and duplication.

We have an example of duplication between unemployment insurance and retirement pay. In a high-employment economy our labor force is peculiarly flexible, with literally millions of housewives and oldsters readily available for work, so that disability benefits and pension payments become unemployment benefits payable between intervals of work.

There are similar duplications between payments as a matter of right, and

nonmonetary services, such as institutional care. As Mrs. Merriam indicated, the problem of institutional care will grow as our aging population becomes less ambulatory, and the most efficient solution may lie in giving the individual a choice between a cash pension and full maintenance inclusive of medical care.

In the past, social insurance benefits were often a convenient method of distributing relief without means test. When unemployment benefits became exhausted in Europe during the depression years, the insurance mechanism was used to continue relief payments. Children's allowances, while originated perhaps for military manpower reasons, were used later to mitigate the effect of inflation on larger families, a mechanism by which income was distributed as wage additions based on need. It seems to me that maximum utilization of all social insurance payments can only be achieved if the benefits under all public plans could be co-ordinated. By the same token, private plans should be designed—and adjusted from time to time—to achieve the greatest degree of integration that is feasible.

A discussion of the long-range economic implications of social insurance might involve the effects of the accumulation of the trust funds on the Federal Reserve's management of our monetary affairs. As the Social Security actuary estimated (and I am using medium cost assumptions), the OASDI trust funds alone will absorb during the next twenty years about 50 billion dollars of government securities, which is practically the entire volume of such securities now in the hands of our commercial banking system. While twenty years may be too long a period to look ahead, we shall notice within a decade the effects of the freezing of marketable government bonds—that is, the federal debt—into our federal trust funds, including unemployment trust funds, national service life insurance, railroad, civil service, and state and local retirement funds.

Both speakers question whether we have a proper relationship between contributions and benefits. Mrs. Merriam feels that as the earning level is modified by productivity the benefit level should be modified correspondingly, and Dr. Brown feels that there should be a balance between the graduation of benefits and the proportion of contributions to wages. There is one type of balance which would apply to current benefits, such as unemployment or temporary disability, but there is another type of balance which would apply to deferred benefits, such as old age pensions or survivor benefits; namely, the balance of rights and duties between generations.

With respect to retirement, we are promising well-defined and well-understood rights to the products of the future. As these rights become due, the retired population, endowed with considerable voting rights, will demand not only the dollar value promised, but they will want at least the living standard value in effect when the promise was made, and more likely they would want the standard of living then prevailing, including items that are luxuries now but may be considered necessities by then.

There is no way by which we can force the workers of the future to honor these promises which they can negate by legislation or inflation. What we can do is to create the tools of production which will make it easy for future generations to produce in excess of their own needs. Only if this is done can we say that a proper balance exists between the liabilities we impose on future generations and the assets we pass on to them.

JOHN P. HENDERSON: Speaking as a general theorist with little research experience in this applied field of social security and welfare, I would like to comment upon the theoretical issues that I think are important in this area.

In the first place, Dr. Ida Merriam's succinct survey of the recent increases in number of resources devoted to supporting and developing certain segments of the economy's labor supply draws attention to the shift in emphasis now occurring in the output of the economy. It is clear that we are experiencing a marked transfer of resources to all the service industries, and there is a continuing trend away from both farming and manufacturing. The 1950 census reveals that a higher and higher percentage of the growing labor force is being absorbed by service industries, of both a public and private nature. As Professor George Stigler has recently pointed out, only 27 per cent of the labor force was employed in services in 1910 and 1920, whereas the 1950 figures show 44 per cent to be so employed. With physical productivity rapidly increasing in both manufacturing and agriculture, we are fast becoming a nation in which the service industries, no longer mere appendages, are receiving an ever increasing portion of the consumer's dollar. Increased specialization in the production of goods has led to marked increases in the percentage of the labor supply employed in wholesale and retail trade, and, at the same time, more and more human resources are being channeled into education, medical care, and entertainment. In addition, the economy has now undertaken various insurance services, allocating resources to protect individuals and groups from the insecurities of unemployment, industrial accidents, and old age, and to prepare youth for future entry into the labor force. Looming largest among our governmental services are the vast resources devoted to the military for national defense and security.

These increases in public service expenditures and the accompanying increases in the number of persons employed in supplying these diverse services can be viewed as outgrowths of an over-all shift from a major emphasis upon production of goods to a growing interest in producing services. We now live in an economy which can afford to produce services as well as goods, and the resulting reallocation of the labor supply has a number of social implications. The strongest of these may well be greater employment stability as more and more people become engaged in the production of services rather than durables. However, my purpose is to discuss these implications as they pertain to social security and to that badly named group of services known as "public welfare." This latter term—a carry-over from the days of the public dole—certainly has connotations which are no longer applicable in an economy very near to being dominated by the service industries.

In the broadest sense, many of the services that are maintained and directed by the government are free so far as the individual consumer is concerned. While there are economic costs associated with any public service, since resources must be devoted to it and these must be compensated, never-

theless these costs are not always borne by the individual consumer in direct proportion to the amount of service received. We sometimes recognize that some of the costs of these services are the social overhead of the economy as a whole. Education, public parks, zoos, and roads are services for which the individual consumer bears little of the cost burden. There is no attempt to relate tax paid to service received, and the general fund derived from income or property taxes usually covers the social costs of such services.

However, we are by no means consistent in our procedures. Many public service costs are maintained exclusively by a system in which service rendered is keved to the contribution an individual has made to a special fund established specifically for that particular service. Social insurances against old age dependency, unemployment, and industrial accident fall into this category, and the fact that we continue to apply the "carrot and the stick" philosophy to these public services is an indication of our cultural lag. We usually relegate to the general social overhead those services from which it is clear that society as a whole benefits. But with respect to those services which directly benefit the individual who received them, the individual is expected to pay in direct proportion to services received. That we recognize the social value of these latter services is indicated by the fact that they are provided at all, but this recognition is contradicted by the mechanisms through which we pay them. While we deem them to be socially desirable and warranted, we do not, as a society, accept responsibility for their costs. As Dr. Merriam has suggested, one of the most direct benefits to society that accrue from such services is their stabilizing influence upon consumption and income, but the current mechanism for payment continues to place the burden. upon the individual rather than upon society.

Now, the problem of the cost of public services may be conveniently separated into (1) the desirable magnitude of these costs, as a percentage of the net national product, and (2) the method of collection to be employed by the public agency which administers these services. As has been indicated, definite trends suggest that public services, as well as private ones, are on the increase and that they will continue to absorb a rising percentage of the labor force. Given the present predilections of the American consumer and producer, there are no reasons to assume that the trends will be altered. As economists, we can do little to foster or forestall these trends, but with respect to the second aspect of the problem, we do have choices in recommending how these costs can best be deferred. Both the principles of economic theory and the broader dictates of institutional economics point to the conclusion that all costs of public services can best be borne by the general income tax, and that the present practices of employee and/or employer contribution are inefficient methods which interfere with the market mechanism. Some of the difficult problems of the contribution procedure have already been admirably discussed by Dean Brown, and my comments are formulated as a direct result of his stimulating discussion of "problems for the voung economist"!

With social security and related services being extended to an ever widen-

ing range of economic groups and with the economy growing more and more aware of their general advantages, these services are rapidly becoming general characteristics rather than special cases. The assumption that social insurance is a privilege which must be deferred exclusively by the individuals who receive its benefits is no longer applicable in an economy where these benefits are extended to so large a proportion of the labor force. In addition, the continuing inflation which appears to have become a permanent aspect of our economic life is rapidly undermining the procedure which ties services received to past income earned. Recent increases designed to meet inflationary pressures place combined employer-employee contributions in the neighborhood of 6 per cent. However, these increases do not benefit those whose compensation, received currently or in the future, is based on contributions at the lower percentages of previous time periods.

In terms of social equity, as well as for the adjustment of tax systems to the changing characteristics of the economy, it seems desirable that all social security and welfare services be deferred by a general income tax rather than by the log-rolling procedures of the employee-employer contributions system. Professor J. R. Hicks, among others, has indicated that an income tax is always preferable to an excise tax or any tax which imposes restrictions upon particular segments of the economy. The best precepts of economic theory show that any tax that uses either cost or price as its basis of incidence is sure to interfere with the market mechanism, especially when it is as high as 6 per cent. If our purpose in taxing for public services is to raise revenue, not to regulate or restrict particular markets, the tax system must be so designed that the effect upon the market is minimized, and we should leave to the free price system those problems with which it can most effectively deal. If we continue to depend upon contributions to special funds to maintain public services, we impose upon the market mechanism a burden it can well do without. That we will some day recognize this, in policy as well as in economic theory, is the hope of this political economist.

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## WELFARE ECONOMICS AND INCOME DISTRIBUTION\*

# By Jan Tinbergen Harvard University and Netherlands School of Economics

#### I. Another Critique of Welfare Economics

The main problem welfare economics deals with may be formulated as follows: What conditions have to be fulfilled by a community of individuals in order to make its welfare a maximum? Welfare economics thus has to be conceived of as a theory of economic policy searching for some "optimum regime." If it had been successful, it should have had considerable influence on practical political thought, comparable to the influence exerted by the natural sciences on technology or by certain statistical methods on quality control. But welfare economics has not been successful in this sense. As far as results have been obtained, these are little known outside a small group of experts; and not many results of practical relevance have been obtained. Let me illustrate these two statements. Take the proposition that "under certain conditions free pricing leads to a maximum total product." The conditions referred to are not too familiar to many politicians. These conditions, as far as our present knowledge goes, are fairly strict, as you know. They are: (a) The factors of production have to be as fully used as is technically possible; (b) prices should be equal to marginal costs; (c) productivity should not depend on consumption of the individual producer nor on the distribution of consumption; (d) there should be no external economies between independent producing units.

Total product is not a sufficient measure of welfare, and this constitutes another serious limitation on the proposition. In order to prove the proposition we have to interpret the "product" as the value at free trade prices of the quantities produced of different commodities. For separate sectors or countries the buying power of their product has to be calculated by dividing its value by the price level of the goods they buy. With product a maximum its buying power need not be. Moreover, the distribution of the product or income between individuals is a major factor in welfare, which, in addition, may influence total product. Welfare hence need not be at a maximum with production or its buying power at a maximum. All these results of welfare economics are in fact seldom recognized. Lack of knowledge among politicians about welfare

<sup>\*</sup>Address presented at the joint meeting of the American Economic Association and the Econometric Society, December 28, 1956.

economics may also be illustrated by the misunderstanding, often prevailing, that a corollary of free pricing should be the absence of income transfers—either between individuals or between countries.

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Apart from being badly understood, the results of welfare economics are not very relevant to practical economic policy either. Some of the most important practical issues of economic policy have to be dealt with without any help from welfare economics. This is particularly true for Europe. Ever since the now leading political party in northern Europe came into existence—I mean the Social-Democratic Party—the practical issue of income distribution has been problem number one, often linked up with goals of social justice. The importance of this issue is by no means restricted to northern Europe; in southern Europe as well and, in fact, in the world at large, it is now coming into the limelight.

The contribution of welfare economics to this problem has been wholly negative. The distribution of incomes between individuals, though investigated statistically since Vilfredo Pareto, usually is not even treated in textbooks on economics. About the factors making for this distribution—believed to have shown remarkable regularities—and hence about the ways it could be influenced, very little has so far been done. On the contrary, one would almost say, welfare economics has tended to deny that the problem of distribution makes sense. By the doctrine of the impossibility of interpersonal comparison of utility, it is implied that the concept of justice cannot be given a precise meaning.

If this critique of welfare economics—not the first one, as you know—is justified, we have to accept the consequences. It is my contention that something can be done. I propose to give an outline of what welfare economics could do about this problem of income distribution and social justice. The two subjects have a different character. An attempt at constructing a theory of income distribution has to be seen as an essay in economic theory. In trying to define the concept of social justice, one may have to leave the realm of scientific activity. Sometimes excursions into adjacent territories are useful, however.

# II. Income Distribution within One Nation; Attributes of Individuals and "Jobs"

When trying to explain the main characteristics of income distribution, we shall have to distinguish between distribution within one nation—where factors can move more freely—and income distribution between nations—where such freedom is far more restricted. Let us first consider how incomes within one nation are generated. Essentially we have to think of the markets for productive effort as the scene where

these incomes are formed. These markets so far usually have been subdivided into the labor, capital, and land markets, with little attention given, at least in general economic texts, to the finer subdivisions and the individual endowments of such factors. The separation into capital, labor, and land markets seems to be less relevant to start with than a splitting up of the whole complex into a large number of finer compartments, each of which is more homogeneous. Each individual supplying productive services may then be characterized by a certain number of endowments, such as a certain intelligence quotient, a certain ability to deal with other people, a certain physical strength, a certain endowment with capital or land—this last being zero for most people in most countries. The total number of such attributes may be put as high as thirty in some more refined job evaluation schemes, but probably an adequate description can also be obtained already with only three or four of them. From figures published by the U.S. Employment Services, one gets the impression that many of the eight to twelve attributes studied in a sample survey of the American people are highly intercorrelated. This made it possible for Mr. R. H. Tuck<sup>1</sup> even to try to explain income distribution by one single attribute: the ability to supervise other people. Whatever the number of attributes, we will have to distinguish between this number and their nature, on the one hand, and the degree to which a certain attribute is present with a certain individual, on the other hand. It is these degrees, or if you prefer, scores, which describe a certain individual; all individuals having about the same scores are put together in a frequency class interval. The productive population of the nation may thus be described by a multidimensional frequency distribution of their scores or degrees, One of my examples will be a two-dimensional frequency distribution. It represents the supply side of the complex of markets for productive effort.

The demand side of this complex of markets may also be characterized by a frequency distribution. The organizers of the country's production process conceive of a number of "jobs" they want to be filled. Job has to be taken in a generalized way so as to include, say, a house-owner or even a rentier. These jobs can be identified by their job evaluation marks, each of them corresponding to one of the scores of the individuals. In order to distinguish between them, we will speak of the "scores required" versus the "scores present" with the population.

### III. Variability of Attributes

At any given moment all these scores may be said to be given. This does not mean that they are constant in time or cannot be influenced.

An Essay on the Economic Theory of Rank (Oxford, 1954).

A few remarks have to be made about their variability. First, during each individual's life there will be a certain development, as a consequence of his growing experience, in his abilities. This process, although essentially dependent on the jobs taken by the individual, may, as a first approximation, be considered to depend on the age of the individual. Next, there is the influence that can be exerted by various processes of deliberate education. In both processes there is scope for making a distinction between attributes that can be changed more or less easily. Some examples are: (a) the speed of work, that may almost instantaneously be influenced by appropriate stimuli in wage systems; (b) certain frequently wanted skills of a simple nature, for which education of a few months may be sufficient; (c) such attributes as require from a few to several years of school or higher training; and (d) fundamental abilities, sometimes called innate, of which we do not know whether they are unchangeable at all or whether perhaps after a generation or a few generations they in fact can be changed.

Some statistical and other factual material is already at hand from which coefficients could be derived indicating the costs—in time, effort, and money—involved in changing certain of the attributes of certain types of individuals. There is scope here for an "economics of learning" which could contribute to the solution of some of our educational problems, especially as to the ideal extent of our school systems and other training facilities.

So much for the variability of the attributes of individuals. The attributes of jobs are not invariable either. The products demanded by the community can be produced in different ways, by teams of different composition. Textiles may be produced by combinations of machines and men not only differing as to their relative quantities but also with regard to their qualities: workers of more training or of simpler skills may be used. The pattern of jobs available will have a certain elasticity with respect to the relative wages to be paid to different types of labor or, more generally, with respect to the relative prices to be paid for different types of productive agents. Unfortunately, we know much less about this variability than we ought to. There is some evidence of fairly large substitutability between, say, labor and capital in agriculture, the building trade, in textiles, in internal transportation, and recently in simple administration; but there is also the widespread feeling that in many other industries there is no wide range of possibilities. To the extent that this elasticity is absent, there is complementarity between a large number of types of jobs-meaning that under very different scales of relative wages a certain number of very qualified, along with numbers of less and unqualified, labor (and other effort) will always be in demand. Considerable research remains to be done in this field, but work has recently been undertaken in various quarters. I may mention the Center for International Studies at M.I.T., the Départment of Economics of Stanford University, the Netherlands Economic Institute, and the United Nations Secretariat.

## IV. Possibilities of Explaining a Logarithmic-normal Distribution of Incomes

Incomes in the various compartments of the market for productive effort may be said to be the prices paid for efforts of different qualities, as characterized by the set of scores of the jobs. We may conceive of these prices as a system, or a "scale," well known in wage practice, where income is a function of these scores. The economic function of this multidimensional scale is, in the long run, to equilibrate demand and supply in the many compartments. It is this system of interrelated markets and prices of efforts which is more interesting for the problems of welfare economics than the system of interrelated markets and prices of commodities, usually analyzed in economics.

The underlying theory may be based on the same mechanism as used in demand and supply of commodity markets. Each individual, confronted with a set of prices in the various compartments, will decide where to offer his effort with a view to maximizing his satisfaction. The one basic difference from commodity demand is, to be sure, that here the total supply of an individual will as a rule be concentrated on one compartment, whereas his demand for commodities will be distributed over a large number of compartments. The compartment—or "job"—chosen will be the one that, as already said, maximizes his utility. This utility will depend on at least three variables, each of a complex nature:

(a) the attributes of the person we consider; (b) the attributes of the job chosen; and (c) the income so to be earned, standing for the quantities of goods he will be able to buy with it.

If the incomes in all compartments were equal, the job he would choose would be the one fitting him best; i.e., indicated by the same marks as his personal attributes. There would be less satisfaction—in fact, a certain tension—if his job were below his capacities, but equally if it were beyond. It is my contention that the economic function of income in a state of unequal incomes is to induce a sufficient number of individuals to accept jobs somewhat beyond their attributes, since otherwise there would not be sufficient applicants for the highly qualified jobs. Income would, if this presentation is correct, compensate for the tension between the scores required and the scores present.

Elsewhere I have tried to give a mathematical presentation of this

market mechanism.<sup>2</sup> A theory like the one I sketched will have to be tested before we attribute importance to it. This testing does not appear so utopian as one might think at first sight. As I observed already, considerable material is available, of which the data of the U.S. Employment Services seem to be particularly promising.3 They should, however, be supplemented by material about job evaluation. In the Netherlands Central Planning Bureau, we are now attempting to get material of both types. As was observed, one attribute is wealth or capital owned; the influence of this attribute on income distribution is known already and accounts for a considerable part of inequality.4

It looks as if we shall be able to give to the theory a quantitative

<sup>2</sup> Jan Tinbergen, "On the Theory of Income Distribution," Weltwirtschaftliches Archiv, 1956, where I am assuming two attributes only,  $t_1$  and  $t_2$  being the scores of individuals and  $s_1$  and  $s_2$  those of jobs. Their distributions are taken to be two-dimensional normal ones with averages  $l_1$ ,  $l_2$ , standard deviations  $\tau_1$ ,  $\tau_2$  and correlation coefficient  $\tau_t$  for the t-distribution and the corresponding symbols for the s-distribution. The utility function for all individuals is supposed to be  $\omega = \omega_0 \log l - \frac{1}{2}\omega_1(s_1 - l_1)^2 - \frac{1}{2}\omega_2(s_2 - l_2)^2$ . It can then be shown that an income scale  $\log l = \lambda_{00} + \lambda_{10}s_1 + \lambda_{01}s_2 + \frac{1}{2}\lambda_{20}s_1^2 + \lambda_{11}s_1s_2 + \frac{1}{2}\lambda_{02}s_2^2$  will equilibrate demand and supply. If both  $\tau_1$  and  $\tau_2 = 0$ , the solution is:

$$\lambda_{10} = \frac{\omega_1}{\omega_3} \frac{\bar{s}_1 - \bar{t}_1}{\tau_1}; \qquad \lambda_{01} = \frac{\omega_2}{\omega_3} \frac{\bar{s}_2 - \bar{t}_2}{\tau_2}; \qquad \lambda_{11} = 0;$$

$$\lambda_{20} = \frac{\omega_1}{\omega_3} \left( 1 - \frac{\tau_1}{\sigma_1} \right); \qquad \lambda_{02} = \frac{\omega_2}{\omega_3} \left( 1 - \frac{\tau_2}{\sigma_2} \right);$$

for  $r_s \neq 0$  they are more complicated, as they are for the case of non-zero elasticity of demand for productive effort. Cf. also my *Economic Policy: Principles and Design* (North Holland Publishing Co., Amsterdam, 1956), "model 08," p. 236.

\*\*A Recently I learned that Professor Ingo Ingenohl, of M.I.T., has been working along

these lines for several years.

<sup>4</sup> According to S. Kuznets, Shares of Upper Income Groups in Income and Savings (National Bureau for Economic Research, No. 55, 1953), the following distribution existed in the United States in 1948:

AVERAGE INCOME PER PERSON, EXPRESSED IN TERMS OF AVERAGE TOTAL INCOME PER PERSON

	From Employ- ment	From Entre- preneurial Activity	From Property	Total
Top 1% Top 5% Top 10% Top 20% Lower 80% Average all sizes of income	1.4 1.15 0.61	3.0 1.2 0.7 0.41 0.15 0.20	2.7 0.7 0.4 0.23 0.05 0.09	8.4 3.5 2.5 1.79 0.81 1.00

From these figures we may conclude that the difference between the income 8.4 of the highest 1 per cent and the average 1.00—being 7.4—is composed of: difference in property income, 2.6; in entrepreneurial income, 2.8; in employment income, 2.0. Inequality measured in this way, may therefore be attributed for some 35 per cent to inequality in property income. It may even be more, in that part of the inequality in entrepreneurial income may also in essence be due to inequality in property.

basis. And it also seems that along these lines we might arrive at an explanation of the income-frequency curves so far observed. I am, in particular, thinking of the so-called "logarithmic-normal" distribution curve—the curve assuming that the logarithms of incomes are normally distributed. This alternative to Pareto's formula was presented and tested by Van der Wijk, Gibrat, and others, who did not offer an explanation, however. The more precise formulation of the theory can only be given in the mathematical terms I mentioned. Loosely speaking, the element of normal distribution would come in since required as well as available scores appear to be normally distributed, whereas the logarithm would come in as a suitable presentation of the utility function. This is very loose talk, however. There are some major problems between the formulae presented and this interpretation which I cannot now deal with. One of them is the scales used for measuring the attributes.

#### IV. Possibilities of Influencing the Income Distribution

The essential advantage of an explanation rather than a statistical description of the distribution of incomes is the possibility it offers of making statements about the ways to change it by changing its data. This is what welfare economics should be able to do. As an example, let me consider the questions (a) what influence education could exert on income distribution and (b) what conditions would have to be fulfilled in order to make an equalitarian income distribution possible?

Supposing for a while that the theory and formulae presented in footnote 2 would be a good approximation to reality, the answers would be as follows. The influence of education on income distribution would act through the effect it may have on the distribution of individual qualities. To the extent education could lift the average level of abilities present in the direction of abilities required, it could make the slope of the income scale flatter. To the extent education could reduce the standard deviation of available abilities to that of required abilities, it could make the scale of incomes a straight line instead of a parabola.

A state of income equality would require identity of the distribution of abilities (and other attributes) required and available. It would not necessarily require equal abilities for all people, as is sometimes suggested by such statements as that income inequality is due to the differences in abilities between individuals. It would suffice if the divergencies between abilities were no larger than the divergencies needed for the productive teams of which each enterprise or other productive

<sup>&</sup>lt;sup>5</sup> J. van der Wijk, Inkomens- en vermogensverdeling (Haarlem, 1939); R. Gibrat, Les inégalités économiques (Paris, 1931).

unit is composed—to be sure, the teams needed by the organizers of production under the circumstances of equal incomes. Depending on the not too well-known elasticity of the composition of these teams with respect to relative wages, the composition of such teams might differ from what they are now. However, the teams wanted under egalitarian circumstances will not, it seems, be entirely made up of managers and professors. Maybe quite a few miners and farmers and drivers will be needed even then.

A very well-known and controversial question in this connection would be: What distribution of capital assets is necessary in order to maintain any given level of productivity or, in other terms, to what extent does the ownership of the assets which a certain number of producers operate affect productivity?

## VI. International Income Distribution.

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International differences in incomes are more pronounced than differences within one nation. This has been illustrated in a striking way by Theil in his inaugural address at the Netherlands School of Economics. Even if we assume that all incomes inside each country are equal, we find, for the international community, a distribution whose Pareto constant is far below what it ever was inside any one country for which data have been studied, pointing to considerably larger inequality. This inequality, in addition, has the tendency to increase rather than to decrease.

Turning first to a possible explanation of these differences and trying to use the same instruments of analysis, I submit that endowments with the various attributes are in fact quite different between nations. To begin with, capital and land per head are widely diverging, and, roughly speaking, proportional to income per head. In addition, other attributes vary, as is illustrated by the percentage of skilled workers or university-trained citizens in different countries. Much more significant probably is the divergence in relative numbers of managers. Some of these divergences probably are a consequence of differences in capital per head; but there may also be a causal connection the other way round, and there is the influence of climate on personal energy and ambition.

Even with some differences in capital and natural resources, there may be, as we know, factor price equalization. That is, even without free movements of factors between countries, there may be a specialization in countries with little capital per head on labor-intensive activities and in countries with much capital on capital-intensive industries sufficient to allow the same income to each factor in different countries. But we know that in order to let this happen, capital per head should

not differ too much between countries, not more, for instance, than between movable industries. Very probably the range within movable industries is not very large. It so happens that both the most capital-intensive industries (energy, land transportation) and the most labor-intensive ones (banking, personal services) are tied to the spot where their products have to be delivered. Factor price equalization therefore does not occur. Generally speaking, a man with the same abilities will receive a higher income in the wealthier countries than in the less endowed countries.

Once a certain difference in income has developed, there are various forces tending to increase that difference. Higher incomes mean higher consumption and health and this increases productivity. Higher incomes also mean higher savings ratios and hence quicker growth of the country's capital. Because of external economies in public investments (transportation, education), capital may even be attracted that otherwise might have been invested in the less developed countries. All these forces together seem to be responsible for the tendency towards the divergence in living standards we observe.

The forces involved have only partially been measured so far. Several institutions involved in studying the problem are collecting material. Such material should bear above all on the production processes available, on the influence exerted on productivity by such factors as education, social relations, and capital, and on the nature and extent of external economies.

Among the factors by which the international income distribution could most effectively be changed, capital transfers, education, and population policy should be mentioned. Whereas the importance of the first two factors will be clear from what precedes, a word may be added about the third. It will be clear that capital per head can be influenced in two ways: by changing the total quantity of capital and by changing the number of heads. Unless some check is applied on numbers, it may very well be that most of the efforts to increase capital will be ineffective. I consider it my duty as an economist to be explicit about this point.

From my brief survey of the problem of international income distribution, I conclude that useful research could be undertaken in this field too and is being undertaken.

# VII. Social Justice and the Social Welfare Function

The second problem I proposed to deal with is the one of social justice. This is the problem of the appraisal of a given state of distribution. Such an appraisal exists, first of all, in the mind of each in-

dividual involved, as has recently also been realized by economists. Not very much attention has so far been given, however, to the nature of this appraisal for social purposes—i.e., in the social utility function of guiding politicians—and the concepts used in political thought to express it. For a long time economists have been mostly concerned about the appraisal of the flows of goods and services pertaining to each individual separately, and about the question how this could be maximized either for one individual or for a set of individuals. Distributional aspects often only came in as a corollary to this maximization. Even the well-known statements about an equalization of marginal utilities between different individuals usually are derived from some sort of maximization of total utility, whatever that may mean.

But the aspect of mutual relations is an autonomous element in the appraisal, both individual and social, of a certain state of the economy, or society at large. In many qualitative matters of life, certain feelings about these relations have been expressed and have influenced action.

This has now, I think, been recognized by most students of the problem. An individual's sense of happiness is not only determined by the variables pertaining to his own consumption but also by those concerning the consumption of others. The somewhat difficult situation we are now facing is that, although individuals do care for others, too, we are not certain they are caring enough. In the nineteenth century it was maintained that if only everyone took care of himself, society as a whole would automatically take care of the harmony of the group. We are now doubting this. We want our policy-makers to see to it that no harm is done to the weak. This means that the social utility function guiding the politician has to depend on what I would like to call the distributional aspect of the economy. There are interesting questions involved. We may delegate the care for this aspect to our politicians and then forget about it in our own decisions. This might mean that certain simple types of social welfare functions are excluded; e.g., those just adding up the utilities of the individuals—if that is possible at all.

As a concept of reference for the distributional aspect of the social utility function—and, if you like, also of the individual utility function—the concept of equality has come to play an important role. The concept is used in two contexts: equality of treatment and as a right deriving from inherent equality. The latter represents a hypothesis about the nature of man; the former refers to policies or regimes in different fields. In times when equality in the sense of equal treatment was remote, Christianity liked to think of men being equal before God, referring to assumed inherent equality; much later, when,

however, equality in economic treatment would still be remote, "equality before the law" developed as a goal. Each letter from a French official institution reminds us of the device of the French revolution: "Liberté, Égalité, Fraternité." Later still, I think, although also in the liberal era, the concept of equal opportunities came to the forefront. Again, more recently, attempts at equalizing income as a policy were made both in Russia and Israel; war food rations basically were equal in each country.

The first question I want to take up is: What quantitative interpretation, for economic matters particularly, can we give to this age-old and deep-seated but rather vague concept of equality in treatment in order to make it a basis for the definition of justice? It is my contention that what we have in mind is equality not only of qualitative, juridical rights, not of tax rates paid or any refinement of tax equality, not equality of incomes either, but a regime leading to equality of satisfaction or utility. Whether this does or does not represent a quantitative criterion depends entirely on our ability to measure it. It is here that I will try to present another outline of research which I hope offers some attraction, compared with the flat denial, now customary, that utility can be measured (and hence interpersonal comparisons can be made).

Surely our present-day technique of measuring it is about as bad as the measurement of temperature was before the thermometer was invented. But there is consensus about certain comparisons: starving, very ill, or wounded people are by everybody considered worse off than gay, healthy, active people. The extremes can be recognized by almost anybody. It requires the better exercised observation of parents, doctors, teachers, or psychiatrists to make finer subdivisions. Both medical and psychological tests are improving as to degree of precision. One line of attack may therefore be to follow and to apply the results of such attempts.<sup>7</sup>

A second approach would be possible if it could be assumed that all individuals had identical utility functions—an identity which might be a more precise specification of the hypothesis of "inherent equality between men." If this hypothesis applied, we might call two individuals equally happy if they were on the same indifference surface.

<sup>&</sup>lt;sup>6</sup> I owe some encouragement to do so to discussions with Professor Robert H. Strotz.

<sup>7</sup> Sometimes one person may be able to compare his utility level and function for two different successive states he is living in and so contribute to interpersonal comparison. The states I am thinking of may be illness and health, or before and after a certain training course has been followed, or before and after surgery, or, finally, before and after an accident. Since we know already of operations influencing, to some extent, children's I.Q.'s, who knows what influence medical science will be able to exert on interpersonal comparison in the future!

At first sight this assumption may seem to be utterly unpromising. It can be given different interpretations, however, and some of the more sophisticated are less open to criticism than the simplest possible interpretation. It depends on what we consider to be the variables and what the coefficients of the utility functions. No doubt utility functions would be different for different individuals if we only considered as variables the quantities of the commodities consumed and the attributes of the job taken. All the differences in taste and in personal attributes or scores would be there to prove this difference.

Two other interpretations are possible, however. First of all, we should not care for details of taste—say for the fact that A likes American cheese better and B Swiss cheese. Only the variables relevant to large differences in well-being should be considered, I submit. Next, the personal attributes could be taken as variables rather than parameters hidden in the coefficients of the utility function. The differences between individuals could then be interpreted as shifts along the axes measuring the personal attributes (t's in my notation of footnote 2). It would be the coefficient before the terms with these t's that would be constant.

This construction requires some elaboration. I plot along the various axes of a multidimensional space the values of income, personal marks, and the marks of the "job." Each point in this space represents a man of a certain quality t in a certain job s with an income l. I assume there • is only one system of indifference surfaces for "mankind": this is my interpretation, for the moment, of the mystical concept of equality. For, say, monkeys or ants, they will be different. To the extent that qualities are innate and unchangeable, however, I am just fooling myself, since no man can ever leave his hyperplane. There are no connecting possible variations in the direction of the t-axes. Here another part of the program emerges: it should try to answer the questions: What are the indifference surfaces in each hyperplane? Are they at least approximately equal for individuals in the same hyperplane? And can we unite them to one system of a general human set of surfaces? Two circumstances will help us. Not all human qualities are invariable, as we saw: there are movements between the planes, if only small movements. Medicine and education may develop more of them in the future. And, in addition, if we find different surfaces in one hyperplane, maybe they can be explained and removed by a new parameter.

I am coming to a third line of defense. For those who think all this is pretty fantastic—I might be one of them—I think there is a simpler way out still. Let us not try to make comparisons between the utility experienced by different individuals. Let us withdraw, for the definition

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of social justice, from utility or satisfaction to the means making for satisfaction; i.e., goods, the scores of the job, and the personal scores. And let us try to evaluate these according to some outside system of valuation, some sort of price system. Unit prices in such a system need not be equal for larger and smaller quantities, however. Such a price system might be obtained from what most people would think of it. Our present-day society already applies such average scales of valuation in that it compensates certain people for certain drawbacks by offering them illness benefits, old age pensions, family allowances, overtime payments, and the like. The program of research springing from this third line of defense—or attack—is to establish a system of prices.

On all three levels, if something can be done, our endeavors should open the way to estimating, for any given constellation, the deviation from perfect social justice.

The use to be made of this concept should be clarified briefly, to finish my argument and in order to avoid misunderstanding. It would not be the only element determining the social utility function and hence economic policy or regime. Average or representative well-being also will have to influence that function. The well-known choice faces us here: often we may gain in one of these two elements at the expense of the other or gain in equality at the expense of average wellbeing or the other way round. The question of how much average wellbeing would have to be sacrificed in order to obtain any given increase in inequality should, in principle, be answered by our theory of income distribution. The question of the appraisal of such changes is an autonomous element of the social utility function. And here we are given a last item for research, independent of what precedes. It might be inquired what preference scales individuals, citizens, as well as representatives and executives, have in this regard—a subject for, say, the public opinion research centers.

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I have reached "the end of my Latin." I tried to indicate a number of items for research in welfare economics which, I hope, might contribute to overcoming the shortcomings in this branch of our science. To sum up, they are: a theory of income distribution; figures on the frequency distributions of attributes of persons and "jobs"; on the elasticity of demand for productive effort and the substitution between capital and labor; figures on the variability of attributes and an "economics of learning"; variations of abilities between nations; a study of interpersonal utility comparisons by parents, teachers, psychiatrists, etc.; of indifference surfaces for variables relevant to average well-being and its distribution and estimates of the average valuations of attributes.

One final point I want to make in this connection is that welfare economics is no exception to general economics in that it needs an equilibrium between theory and observation. One of the drawbacks of my paper is, I am sure, that it contains promises of future research rather than many results of research already undertaken. To the extent that you would give me some credit, I shall be under the burden of heavy installment payments, not uncustomary in this country. My excuse is that the research under way may profit very much from your criticism. Though no provision is made for it now, I hope you will let me have the advantage of it in some other way.

# INCOME DISTRIBUTION

# CHANGES IN THE SIZE DISTRIBUTION OF INCOME

By Selma F. Goldsmith U.S. Department of Commerce

This paper attempts to summarize some recent findings concerning changes that have taken place in income distribution in the United States during the past twenty-five years. The discussion is directed primarily at the question of whether or not there has been a reduction over this period in relative income differences among families and individuals. If so, how large has it been, and to what extent are the available figures influenced by particular concepts and definitions?

To those who are working in this field it will be apparent that the materials presented here are not essentially new but merely summarize some of the statistical findings and analyses that have recently appeared or will shortly appear in a number of journal articles, government publications and other sources. However, these materials are sufficiently scattered and the subject important enough so that a summary should prove useful. It must be obvious that the limitations of this paper make it impossible to cover many important aspects of this broad subject.

Although there is some argument as to its exact magnitude, partly as a result of problems of appropriate deflation procedures, there is general agreement that there has been a very substantial increase in total and average real income over the past quarter century. In terms of the personal income series of the Office of Business Economics, total real income flowing to families and unattached individuals increased between 1929 and 1955 at an average annual rate of approximately 3 or 2.5 per cent a year, depending on whether income is measured before or after federal individual income taxes. The number of families and unattached individuals sharing in the income total has increased at an average rate of about 1.4 per cent per year. Thus, real mean family income has risen at an average yearly rate of about 1.5 per cent on a before-tax basis or slightly over 1 per cent on an after-tax basis, from 1929 to 1955.

The increase in average real income has been reflected in a very substantial upward shift in the income-size distribution of consumer units (families and unattached individuals). For example, with family incomes expressed in terms of 1950 prices—and ignoring for the moment certain important problems of comparability of data—we find that the proportion of consumer units with before-tax incomes over

\$3,000 increased from one-third in 1929 to two-thirds in 1954. The proportion above \$4,000 rose from one-fifth to one-half and the proportion above \$5.000 from about 13 to 35 per cent.1

The income-size distributions available for selected intermediate years within the 1929-54 period indicate that a very large part of the upward shift in real incomes occurred between 1941 and 1944. For example, about one-half of the 1929-54 increase of 33 percentage points in the proportion of consumer units with real (1950 dollar) incomes over \$3,000 took place between 1941 and 1944. However, the available price indexes do not reflect certain hidden price increases that occurred during the war so that the deflated figures overstate somewhat the wartime rise in real incomes and understate the increase in the early post-

Of equal significance with the absolute income figures are estimates of the changes in relative income distribution over the past twenty-five years. I propose first to summarize what the available figures show and then to appraise as best we can the validity of these findings.

The two statistical series on income-size distribution to which we can turn, present essentially the same pattern for the post-1929 period; namely, a marked decline in the percentage share of total income accruing to the top income group.

The first of these series, developed by Professor Kuznets, presents annual data on relative income shares received by successive top percentiles of the population; e.g., by the 5 per cent of men, women, and children covered on those individual income tax returns reporting the largest per capita incomes in each year.2 The second series, developed by my colleagues and myself, is on a family rather than a population basis and covers the full range of family incomes for selected years.3 The top 5 per cent in this series refers to families and unattached individuals having the largest family personal incomes in each year.

Starting with Kuznets' series, in 1929 the incomes received by the top 5 per cent of the population amounted to about 32 per cent of the total income receipts of all individuals (measured before income taxes and excluding net capital gains). In 1939, this relative share had dropped to 28 per cent, reflecting mainly a loss in relative share by

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<sup>&</sup>lt;sup>1</sup>Selma F. Goldsmith, "Relation of Census Income Distribution Statistics to Other Income Data," to be published in Vol. 23 of *Studies in Income and Wealth* (National Bureau of Economic Research).

of Economic Research).

<sup>2</sup> Simon Kuznets, Shares of Upper Income Groups in Income and Savings (National Bureau of Economic Research, 1953).

<sup>3</sup> Office of Business Economics, "Income Distribution in the United States by Size, 1944-50," a Supplement to the Survey of Current Business (U.S. Department of Commerce, 1953); "Income Distribution in the United States, 1950-53," and "1952-55," Survey of Current Business, March, 1955, and June, 1956; Selma Goldsmith, George Jaszi, Hyman Kaitz, and Maurice Liebenberg, "Size Distribution of Income since the Mid-thirties," Review of Economics and Statistics, February, 1954.

the topmost percentile of the population. After 1939 declines were registered by all bands within the top 5 per cent. By 1946, the relative share of this top group had fallen to 20 per cent and in 1948 it is estimated at somewhat over 19 per cent (Table 1). For the 1929-48 period as a whole, this represented a decline of 40 per cent in the rela-

TABLE 1
Percentage Shares of Income Received by Top 5 Per Cent, Selected Years

	Top 5 Pe	R CENT OF PO (KUZNETS)	Top 5 Per Cent of Consumer Units		
Year	Economic Income Variant (1)	Disposable Income Variant (2)	Economic Income Variant Plus Realized Net Capital Gains (3)	Family Personal Income (4)	Income after Federal Individual Income Tax Liability (5)
1929. 1935–36. 1939. 1941. 1944. 1946. 1947. 1948. 1952.	32.2 28.8 27.8 25.7 18.7 20.0 19.1 19.4	33.8 27.9 26.8 23.0 15.8 17.7	34.8 27.8 21.4	30.0 26.5 25.8 24.0 20.7 21.3 20.9	29.5 24.8 21.5
Per cent decrease: 1929 to 1946 1939 to 1946 1929 to 1948 1929 to 1952 1939 to 1952	38 28 40	48 34	38 23	29 17 32 21	38 27

Sources: Columns 1 and 2, which represent, respectively, before-tax income exclusive of capital gains, and income after federal individual income taxes but inclusive of realized net capital gains, from Simon Kuznets, Shares of Upper Income Groups in Income and Savings (National Bureau of Economic Research, 1953), pages 453, 635, 637 (with 1948 extrapolated by Kuznets' "basic variant" series, page 599). For column 1, an estimate of 17.4 is obtained for the year 1953 by applying to data from Statistics of Income, Part 1, 1953 (U.S. Treasury Department) and from July, 1956, issue of Survey of Current Business (U.S. Department of Commerce) the various adjustments used by Kuznets to derive his economic income variant series. (Shares, pages 280, 302, 360-361, 366-367, 387, 412-413, 423-424, 571, 577, and 579.) Comparability between 1953 and the earlier years in column 1 is impaired, however, by the introduction of the split-income provision in 1948. Column 3 derived by adding to column 1 Kuznets' adjustment to include net capital gains (page 599, column 5 minus column 1) and subtracting his adjustment for unwarranted inclusions (page 622, column 4 minus column 1). Column 4, which represents personal income before income taxes flowing to families and unattached individuals and excludes capital gains and losses, for 1952 from "Income Distribution in the United States, by Size, 1952-55," Survey of Current Business, June, 1956; 1946 and 1947 from "Income Distribution in the United States, by Size, 1944-50," a supplement to the Survey of Current Business (1953); 1941, 1935-36 and 1929 from Selma Goldsmith, George Jaszi, Hyman Kaitz, and Maurice Liebenberg, "Size Distribution of Income since the Midthirties," Review of Economics and Statistics, February, 1954; 1939 derived by interpolation between 1935-36 and 1941 using column 1 as a basis. Column 5, which represents column 4 minus federal individual income tax liabilities other than those on net capital gains, for 1952 and 1941 derived from sources listed for column 4 for

tive share of before-tax income received by the top 5 per cent of the population. Kuznets has recently conjectured that this narrowing of relative income differences is part of a long-time secular swing that followed a period of widening income inequality during the second half of the last century.<sup>4</sup>

The family income distributions show a similar though somewhat dampened post-1929 decline for the top income group. The relative share of the top 5 per cent of consumer units is estimated at 30 per cent in 1929 and at under 21 per cent in 1944 and in the postwar period.

Both the Kuznets' and family income series represent before-tax incomes and in deriving both of them data from federal individual income tax returns represented the primary source material. The difference between them reflects a number of factors, such as differences in the basic unit of measurement (the family versus the person), in the concept of income, and in the adjustments that were made in the basic tax-return statistics by Kuznets, on the one hand, and by the various sets of persons who initially developed the family distributions for selected prewar and postwar years, on the other.

The family income distributions also tell us how the decrease in relative income share of the top 5 per cent of the consumer units was spread among other income groups. Between 1929 and 1947, for example, the 9 percentage points of decline in the share of the top 5 per cent were offset by the following gains:  $3\frac{1}{2}$  percentage points by the lowest 40 per cent of families and unattached individuals,  $2\frac{1}{4}$  points by the middle quintile,  $2\frac{3}{4}$  points by the fourth quintile, and  $3\frac{4}{4}$  points by the 15 per cent of consumer units directly below the top 5.1

A salient point is that for the lowest 40 per cent of consumer units, the period of greatest relative gains was between 1941 and 1944. Since 1944, there has been little change in the relative distribution of family income according to the available figures.

Kuznets has also developed a series in terms of disposable income (i.e., income after federal individual income taxes and inclusive of capital gains). For the top 5 per cent of the population, the relative share in total disposable income dropped from almost 34 per cent in 1929 to well under 18 per cent in 1946, the last year for which this series is available. This represented a decrease of 48 per cent, 10 points more than the 38 per cent drop in the before-tax income share from 1929 to 1946 (Table 1).

These decreases in relative income shares are reflected strikingly in the average income figures for the top income sector. Kuznets' per capita disposable income of the top 5 per cent is about one-eighth lower

<sup>&</sup>lt;sup>4</sup>Simon Kuznets, "Economic Growth and Income Inequality," American Economic Review, March, 1955.

in 1946 than in 1929, even in current dollars; i.e., before allowance for the higher prices prevailing in the latter year (Table 2). On a before-tax basis the current-dollar per capita income of the top 5 per cent just about kept up with the rise in the consumer price index for the period 1929-46 but fell behind by 1948. However, attention must be called to the limited applicability of the consumer price index in this context. Not until we are able to develop differential cost-of-living indexes appropriate for the various income groups and can solve the problem of how to deflate the portions of income used for income taxes and saving, will we be in a position to measure with precision changes in the distribution of real income.

TABLE 2

Average Income of Entire Population and of Top 5 Per Cent, Selected Years

	Average Income Per Capita (Kuznets)				. C
Year	Economic Income Variant		Disposable In	Consumer Price Index 1947–49=	
	Total Population	Top 5 Per Cent	Total Population	Top 5 Per Cent	100
1929. 1939. 1941. 1946. 1948.	\$ 674 537 700 1,234 .1,400	\$4,339 2,982 3,594 4,926 5,421	\$ 690 528 664 1,166	\$4,666 2,831 3,052 4,118	73.3 59.4 62.9 83.4 102.8
Percent increase: 1929 to 1946 1939 to 1946 1929 to 1948	83 130 108	14 65 25	69 121	-12 45	14 40 40

Sources: Averages (see Table 1 for definitions) derived from Simon Kuznets, Shares, etc., pages 635, 637, 639, 641, 644 (with 1948 extrapolated from 1947 by Kuznets' "basic variant" series). Consumer price index from Bureau of Labor Statistics.

Several related statistical series lend support to the finding that there has been a reduction in relative income differences in the post-1929 and particularly in the post-1939 period. Confining our attention to the before-tax income measures, these include:

1. Changes in the relative importance of the various types of income in the personal income total. Since 1929 there has been a striking increase in the percentage that wages and salaries and transfer payments constitute of the personal income total flowing to families and unattached individuals. These payments together accounted for 61 per cent of total personal income in 1929, 67 per cent in 1939, and 73 per cent in 1950-55 (Table 3). In contrast, there was a marked reduction

<sup>&</sup>lt;sup>2</sup> Geoffrey Moore showed that this fall took place within the top 1 per cent of the population. See "Secular Changes in the Distribution of Income," AEA Popers and Proceedings, May, 1952.

TABLE 3

Per Cent Distribution of Family Personal Income by Major Types of Income and Relative Importance of Compensation of Employees in National Income, Selected Years

	1929	1939	1949	1950-55 Average
Family personal income: Wages and salaries and other labor income Transfer payments	59.6 1.7	63.3 4.0	64.8 5.9	67.5 5.4
SubtotalBusiness and professional income:	61.3	67.3	70.7	72.9
Farm	7.1	6.1	6.4	5.2
Nonfarm	10.5	10.2	10.7	9.8
Dividends and interest	$\begin{array}{c} 14.7 \\ 6.4 \end{array}$	12.6 3.8	8.2 4.0	8.3 3.8
Total	100.0	100.0	100.0	100.0
tional income originating in:	150	j + 1	4	
Economy as a whole	58.2	66.1	65.2	67.3
nerships, and proprietorships)	-61.2	65.8	64.0	66.4
All other sectors	46.9	67.2	69.8	70.7
All nontarm corporations	74.5	80.9	75.8	76.6
Manufacturing corporations	75	81	74	75

Sources: Upper bank derived by adjusting U.S. Department of Commerce personal income series from Survey of Current Business, July, 1956, as described on pages 17-18 and 67 of "Income Distribution in the United States, by Size 1944-1950," U.S. Department of Commerce, 1953. Lower bank, except last line, derived from Table 12 (and underlying data) of 1954 National Income supplement and July, 1956, issue of Survey of Current Business. Last line derived from Survey of Current Business, November, 1956, page 20.

in the shares of dividends and interest—types of income that are heavily concentrated in the upper end of the family income scale.

2. Changes in the relative distribution of the various types of income. By examining the shares of the top 5 per cent in separate types of income, Kuznets found that the relative shares of this top group, based on data from tax returns, declined from 1929 to 1948 for wages and salaries, dividends, interest, and—to a lesser extent—for rental income. More recently, Herman Miller compared the wage and salary data reported in the last two Decennial Censuses of Population for detailed occupation and industry groups and found three factors making for a narrowing of income differentials within the wage and salary sector between 1939 and 1949: (a) decreases in relative income dispersion for men within practically all of the 118 occupations and 117 indus-

<sup>6</sup> For a discussion of the relative importance of wages and salaries and other income shares in national income, see Edward F. Denison, "Income Types and the Size Distribution," AEA Papers and Proceedings, May, 1954, and "Distribution of National Income; Pattern of Income Shares since 1929," Survey of Current Business, June, 1952. Also, Jesse Burkhead, "Changes in the Functional Distribution of Income," Journal of the American Statistical Association, June, 1953, and George J. Schuller, "The Secular Trend in Income Distribution by Type," Review of Economics and Statistics, November, 1953.

tries he studied; (b) relatively greater gains in median wage and salary income for low-paid than for high-paid occupations and industries: and (c) an increase in the proportion of workers classified in occupations with comparatively little income dispersion. Unfortunately similar data are not available from the Census for 1929.

Of particular interest to those in the teaching profession is Miller's finding that when the industries are ranked by size of median wage or salary and grouped into deciles, the educational services industry dropped from the third highest decile in 1939 to the fourth from the bottom in 1949.

- 3. A narrowing of relative income differences, as measured by mean incomes, between the farm and nonfarm population. Because average incomes are lower for farm than for nonfarm consumer units—even with allowance for income received in kind-a narrowing in this differential, barring other changes, will work in the direction of reducing relative income differences in the over-all income distribution. Per capita income of persons on farms was 3 times as large in 1949 as in 1939—reflecting in part the relatively low level of farm income in the earlier year—whereas the corresponding ratio was 2½ for persons not living on farms.8 Despite the fall in farm incomes in the past few years, the ratio of per capita income in 1952-55 to that in 1939 is still substantially higher for farm residents than for nonfarm.
- 4. Another recent study that has bearing on the subject under discussion is the analysis of changes since 1929 in income distribution by states that has been made by members of the staff of the Office of Business Economics.9 As part of this study, per capita incomes in the various states for selected years are expressed as percentages of the national average, and these percentages are compared over time. Two major conclusions emerge.

First, "there has been a significant narrowing over the past quarter of a century in the relative differences in average-income levels among States and regions. . . . As shown by the coefficient of variation, relative dispersion in the State per capita income array was reduced by nearly 40 per cent from 1927-29 to 1953-55."

Second, the period of greatest narrowing of state per capita incomes was that of the war years, 1942-44. Only a small part of the reduction in dispersion occurred in the prewar period, and "the regional differentials obtaining in 1944 were carried over with only moderate alteration

<sup>&</sup>lt;sup>7</sup> Herman P. Miller, Income of the American People (New York, 1955), and "Changes in the Industrial Distribution of Wages in the United States: 1939-40," to be published in Vol. 23 of Studies in Income and Wealth (National Bureau of Economic Research).

<sup>8</sup> Farm Income Situation (No. 159, Agricultural Marketing Service, U.S. Department of

Agriculture), July 17, 1956.

\*Personal Income by States Since 1929, a Supplement to the Survey of Current Business,

into the postwar period and since then have tended to remain relatively stable in most regions."

These findings are remarkably consistent with those for the relative distribution of family income by size. As was noted earlier, the period of greatest gain in relative income share for the two lowest quintiles in the family income size distributions was between 1941 and 1944, and after 1944 the available data show little change in the relative distribution of family personal income by size. Of course, the narrowing of state differentials in average income does not of itself prove that there was a reduction in the relative dispersion of income by size, but it does lend credence to the finding that such a reduction took place.

We turn now to certain limitations in the income statistics. To save time I shall simply list four of the general ones: (a) Income for a single year is not a satisfactory measure of income inequality. (b) We do not have differential cost-of-living indexes appropriate for various income groups; so that we cannot measure with precision changes in the distribution of real income. (c) The available statistics on the number and composition of families at the lower end of the income scale are particularly unsatisfactory. (d) When we compare income shares of a given quintile or the top 5 per cent in two periods, we are not comparing what has happened to an identical group of families, because the families comprising the quintile may be quite different in the two periods. For certain purposes, as, for example, in interpreting the change in the income share of the top quintile or top 5 per cent of families over, say, a five- to ten-year time span, it would be extremely helpful to know the extent to which the families comprising the top sector differed in the terminal periods. Unfortunately, such family income data do not exist.

Next are several more specific limitations in the concept or coverage of the income measure that is used in determining relative income shares. Included in what follows are several points raised by George Garvy at the meeting of this Association three years ago and by Joseph Pechman at our latest Conference on Research in Income and Wealth.<sup>10</sup>

. It is argued, in the first place, that various types of deferred compensation and a sizable amount of income in kind charged to business

16 George Garvy, "Functional and Size Distributions of Income and Their Meaning," AEA Papers and Proceedings, May, 1954, and Joseph A. Pechman, "Comments on Mrs. Goldsmith's Paper," to be published in Vol. 23 of Studies in Income and Wealth. Also see, J. Keith Eutters, Lawrence Thompson, and Lynn Bollinger, Effects of Taxation: Investments by Individuals (1953), pp. 104-109; reviews of Kuznets' Shares etc., by Dudley Seers, Economic Journal, June, 1955, and Victor Perlo, Science and Society, Spring, 1954; Robert J. Lampman, "Recent Changes in Income Inequality Reconsidered," American Economic Review, June, 1954; and George Garvy, "A Report on Research on Income Size Distribution in the United States" (National Bureau of Economic Research, 1955, mimeographed).

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expense escape measurement in all of the income-size distribution series. Since these types of income presumably have grown in relative as well as absolute importance in the postwar period and since they accrue to a greater extent to upper than to middle or lower income groups, their exclusion from the basic statistics has the effect of exaggerating the decline in the relative share of total income received by the top income sector. Liberal expense accounts, free vacations, deferred compensation contracts, stock options given to corporate executives, and employer contributions to private pension, health, and welfare funds (these contributions are excluded from the family incomesize distribution statistics though not from the monthly and annual personal income series) are the main items that have been listed.

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Second, special tax allowances introduced in recent years, such as liberalized depreciation and depletion allowances, operate in the direction of understating the real income shares of top income groups in the postwar period. The splitting of dividend income among the children in the family for the purpose of reducing income tax liabilities would work in the same direction to the extent that the practice has grown in recent years, and full allowance for this factor cannot be made on the basis of the available statistics.

Aside from their effect on upper income shares, the items listed thus far, with one exception, have an important element in common: in the present state of our knowledge, reliable statistical magnitudes cannot be assigned to them. The exception relates to employer contributions to private pension funds for which reasonably good annual totals can be derived. However, this item is probably much more widely distributed than the others on the list and its inclusion would presumably have only a minor effect on the relative income share of the top 5 per cent. (It may be noted that contributions to private pension funds are excluded from the family income measure in order to treat these funds in the same manner as public funds: i.e., benefits from them rather than contributions to them are included in family income.)

Third, another limitation of the statistics which, in this case, has been addressed only to the Kuznets' series relates to understatement of reportable amounts of income by top-sector taxpayers. Kuznets measured top-sector incomes as the amounts reported by taxpayers on unaudited income tax returns (except for adjustments to add tax-exempt interest and imputed rent). It is argued that percentage understatement in reportable amounts of income for upper bracket taxpayers may be larger in recent than in prewar years and that the introduction of an allowance for this factor into the Kuznets' series would dampen the post-1929 or post-1939 decline in the relative income share of the top percentiles of the population.

Unlike Kuznets' series, the family income distributions have been adjusted to allow for income understatement on tax returns in all years and, with the possible exception of 1929, this adjustment included at least some of the income brackets in which the top 5 per cent of consumer units resided. However, mainly because a sufficiently detailed description of methodology is not available in the case of the family distribution for 1929, it is not possible to determine the magnitude of the adjustment for understatement of income that was applied in the top sector of tax returns in that year and compare it with the corresponding adjustment for the postwar period. As was noted earlier, the post-1929 decline in the relative income share of the top 5 per cent is smaller in the family distributions than in the Kuznets' series where no adjustment for this factor is made. This suggests that the statistical adjustment for income understatement in the family distributions has been relatively larger in postwar years than in 1929, but until a complete reworking of the 1929 distribution is attempted this cannot be definitely asserted. (It may be noted that the 1929 distribution included in the family income series represents the Brookings Institution's set of estimates for that year (America's Capacity to Consume, 1934) adjusted to remove capital gains and losses, which are excluded from the income definition used in family distributions for later years. and to reduce the Brookings' allowance for understatement of business income on tax returns for closer comparability with the figures for later years. Thus the resulting 1929 distribution incorporates a smaller allowance for income understatement in the upper income sector than the original Brookings Institution estimates but the magnitude of the allowance that remains could not be determined.)

Fourth, an important point that has been raised frequently by all of those concerned with the statistics on relative income distribution is the effect of the exclusion of capital gains from the income measure. The tax incentive to convert property and even other types of income into capital gains is of course well known, and it is argued that the practice has become increasingly widespread in recent years, particularly within the upper income sector.

By limiting capital gains and losses to the realized amounts reported on individual income tax returns (i.e., before statutory percentage reductions and limitations on losses) and by attributing these amounts to the year in which they were realized—both of these are, of course, debatable procedures—Kuznets measured the effect on upper income shares of adding net capital gains to ordinary income. On the basis of his figures, the percentage decline in the relative before-tax income share of the top 5 per cent is the same for the period 1929 to 1946 whether or not capital gains are included (38 per cent;

see Table 1). For 1939-46, the percentage decline is reduced by the inclusion of realized capital gains by about one-sixth (from 28 to 23 per cent), and it appears likely that the reduction for the post-1939 period would be more significant if the series were brought up through 1955.

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We cannot assign reliable measures to the other factors that have been listed but there is little doubt that taken together they would serve to reduce the post-1929 decline in upper income shares. How large must they be if they were to eliminate the decline entirely? Using Kuznets' series, rough estimates of these amounts can be derived.

In 1946 the aggregate income of the top 5 per cent of the population was 35 billion dollars exclusive of capital gains and 39 billion with realized net capital gains included—20.0 and 21.4 per cent of the respective income totals for that year (Table 1). In order for the relative share of the top 5 per cent to have been as large as in 1929—32.2 per cent exclusive of capital gains or 34.8 per cent with net capital gains included—a minimum of some 30 to 35 billion dollars would have to be added to the 1946 amounts. It is difficult to imagine that the factors listed above can account for magnitudes of anything like this size.

To reach 1939 rather than 1929 levels, the amount which would have to be added to the income of the top 5 per cent in 1946 is in the neighborhood of 18 billion dollars if income is measured exclusive of capital gains, or 15 billion if realized capital gains are included. Again, it seems highly unlikely that the adjustments could be this large.

When we consider the postwar period by itself, the relative magnitudes involved are smaller but nevertheless substantial. The personal income flow to families and unattached individuals in 1955 was at an annual rate of somewhat under 300 billion dollars. Thus if the factors listed above accounted for 3 to 4 billion and accrued entirely to the top 5 per cent of consumer units, the relative income share of this top group would be increased by 1 percentage point; i.e., from the presently estimated 21 per cent to 22 per cent; if they totaled 6 to 8 billion, the increase would be 2 percentage points, etc. In the present state of our statistical knowledge we cannot say which figure would be closest to the actual situation.

Intriguing in this connection is the decrease that has taken place between 1950 and 1953 in the number of federal individual income tax returns reporting high incomes. The number of tax returns decreased in practically all income brackets (before income taxes) above \$200,000 between 1950 and 1951, in all brackets above \$50,000 between 1951 and 1952, and in all brackets above \$30,000 between 1952

and 1953, the last year for which these statistics are available. These decreases are in marked contrast to the general upward shift that took place lower on the income scale. For example, the number of returns reporting incomes between \$10,000 and \$30,000 was 50 per cent larger in 1953 than in 1950, whereas the number above \$200,000 was one-third smaller.

The decreases may well be connected with the stability in dividend payments to individuals in the years 1950-53 and the decline in statutory amounts of net capital gains reported on tax returns in 1952 and 1953. Both of these represent important components of total income for top income tax returns. Total dividends to persons remained close to 9 billion dollars in each of these years and the excess of statutory capital gains over losses reported on individual income tax returns declined from about 3 billion in 1950-51 to  $2\frac{1}{2}$  billion in 1952 and to slightly over 2 billion in 1953.

Nevertheless, in view of the general increase in incomes and in particular the almost certain increase in upper bracket salaries in this period, the decrease is puzzling and merits close investigation, particularly if it should not be reversed in 1954 and 1955—years in which dividends increased sharply and realized capital gains almost certainly did. Such an investigation would require a more detailed tabulation of high-income returns than has been customary—in particular an exhaustive tabulation of all deductions and of all items relevant to the tax shelters that have been noted.

Fifth, the points noted thus far lie within the framework of personal income as the basic measure of the income flow to consumers. Of concern to many of us has been the fact that the relative distribution of income as it emerged from production may have changed over time in a different way from the distribution of personal income.<sup>12</sup>

The major differences between the production measure of the income flow—national income—and the personal income measure are that national income includes and personal income excludes elements of production not paid out to persons—undistributed corporate profits, the corporate inventory valuation adjustment, taxes on corporate profits, and contributions for social insurance—whereas the reverse is the case for elements of income received by persons but not accruing in production—transfer payments and government interest.

<sup>11</sup> Statistics of Income, Part 1, 1950, 1951 and 1952, and Preliminary Report for 1953 (Internal Revenue Service, U.S. Treasury Department).

<sup>12</sup> The effects on relative income distribution of other modifications in income definition

<sup>&</sup>lt;sup>12</sup> The effects on relative income distribution of other modifications in income definition such as adding to family personal income the value of free government services and subtracting excise, sales, property, and other taxes in addition to individual income taxes cannot be covered within the confines of this paper.

In particular, the fact that the undistributed earnings of corporations have accounted for a larger relative share of national income in the postwar period than before the war, coupled with the fact that they accrue to a relatively large extent to top-income groups, suggests that the post-1929 or post-1939 decline in the income share of the top sector would be smaller when such earnings are taken into account than when they are excluded from the income base.

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Using Kuznets' data, Allan Cartter recently demonstrated that by including undistributed corporate profits and corporate income taxes in the income measure—allocating them between the top 5 per cent and all other income groups combined on the basis of Kuznets' distribution of dividends—the decline in the relative income share of the top 5 per cent of the population from 1937 to 1948 was reduced from the one-fourth shown by Kuznets to only 5 per cent (if corporate income taxes are not shifted; to 13 per cent if part of these taxes are assumed to be shifted). This appears at first glance to be in striking contrast to Kuznets' cwn calculations which showed that for the period 1939-46 the inclusion of undistributed corporate profits had only a moderate effect on the decline in the relative income share of the top 5 per cent. (The decline shown by Kuznets was 34 per cent for disposable income and 27 per cent for disposable income plus these profits. Kuznets assumed no shifting.)

The difference in these results reflects in part differences in the time period studied. Cartter's take-off point, 1937, was a year with very much smaller undistributed corporate profits than 1939; and in 1948 these retained earnings represented a larger share of the national income total than in 1946. Thus Cartter's choice of the time period 1937-48 would be expected to produce more striking results than 1939-46.

But the main difference is due to the definition of undistributed corporate profits. Kuznets included only undistributed profits per se, whereas Cartter distributed corporate income taxes as well. Since factor incomes measured before rather than after income taxes are more useful for many types of economic analysis, it is preferable to impute these taxes along with undistributed profits to obtain a measure of the share of the upper income group in total national product measured at factor costs.

On the basis of rough allocations between the top 5 per cent and the other 95 per cent of consumer units of undistributed corporate profits, the corporate inventory valuation adjustment, corporate income taxes, and the other items of definitional difference between personal and national income, the following conclusions are reached:

<sup>&</sup>lt;sup>13</sup> Allan M. Cartter, "Income Shares of Upper Income Groups in Great Britain and the United States," American Economic Review, December, 1954.

TABLE 4

PERCENTAGE SHARES OF TOP 5 PER CENT OF CONSUMER UNITS IN FAMILY PERSONAL INCOME AND ROUGH ESTIMATES OF CORRESPONDING SHARES USING VARIOUS OTHER DEFINITIONS OF INCOME, SELECTED YEARS

turk salah kecamatan kecamatan kecamatan kecamatan kecamatan kecamatan kecamatan kecamatan kecamatan kecamatan Kecamatan kecamatan k	1929	1939	1950–55 Average	PER CENT DECREASE*	
		1939		1929 to 1950–55	1939 to 1950–55
Family personal income (before income taxes).     Family personal income after federal in-	30.0	25.8	20.7	-31	20
dividual income tax liability	29.5	24.8	18.5	37	25
Family personal income plus:  3. Undistributed corporate profits  4. Undistributed corporate profits and cor-	31	27	22	29	16
porate income taxes	32	28	26	20	7
ate income taxes, and inventory valuation adjustment	33	27	25	22	6
6. Family personal income minus transfer payments	31	27	. 22	28	19
payments and government interest, plus contributions for social insurance)	33	27	26	21	5
individual income taxes	31	25	20	36	20

Based on unrounded figures.

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\* Based on unrounded figures.

Sources: Lines 1 and 2 from sources cited in Table 1, columns 4 and 5. Lines 3-5 estimated by distributing each of the 3 corporate profits items (Survey of Current Business, July, 1956, Table 1) between the top 5 and the other 95 per cent of consumer units in proportion to Kuznets' estimates of the distribution of dividend receipts (Shares, etc., page 649). For lines 6 and 7, rough estimates of the corresponding distribution of the other income items listed were derived as explained in Review of Economics and Statistics, February, 1954, page 20. Line 8 obtained by subtracting corporate income taxes (see line 4) and federal individual income tax liabilities (see line 2) from amounts underlying line 7.

From 1929 to the average of 1950-55, converting from a personal income to a national income basis reduces the percentage decline in the relative income share of the top 5 per cent of the population by about one-third (i.e., the decline is reduced from about 30 to about 20 per cent). The exclusion of transfer payments accounts for only a small part of the reduction; the major part is due to adding corporate income taxes along with retained corporate earnings (Table 4).

From 1939 to 1950-55 the corresponding reduction is about threefourths. In place of a 20 per cent decline in the relative share of the top 5 per cent in personal income, there is a decline of only about 5 per cent on a national income basis (i.e., the relative share of the top 5 per cent in national income is estimated at about 27 per cent in 1939 and about 26 per cent in 1950-55). Again, the major reason for the dampening of the decline is the inclusion of retained corporate earnings and particularly corporate income taxes. The 5 per cent decline is too

small to be regarded as statistically significant and in fact may be due entirely to limitations of the statistics such as those listed under the first three points above. In other words, if income is measured in terms of the value of national production at factor costs rather than in terms of personal income flows, there appears to have been no reduction in the relative share of the top 5 per cent of consumer units for the period 1939 to 1950-55. On the other hand, if income is measured after income taxes, the decline since 1939 is sizable (Table 4) but, as is true also for the post-1929 period as a whole, the reduction is overstated to an unknown extent by limitations in our income-share measures.

# THE EFFECTIVENESS OF SOME INSTITUTIONS IN CHANGING THE DISTRIBUTION OF INCOME

By Robert J. Lampman University of Washington

This paper is addressed to the question: How have changes in the market, the family, the employing business firm, and government in terrelated with observed changes in the pattern of income inequalities and income continuity as it relates to persons? The following discussion presumes that there is no single size distribution of income by of servation of which one can definitively establish whether "economic inequality" has increased or decreased. Any particular representation of income distribution yields a picture of income inequality which indetermined to a significant degree by the selection of definitions of income, income receiving unit, and income period, as well as the base for ranking and the method of summarizing the data. Hence any single ranking presented as a definitive statement of "the facts" is best regarded as an illusory treatment of an elusive reality.

If it is difficult to state a summary finding adequately descriptive concome inequality at a given moment of time; it is even more difficulto compare two situations different in terms of time and place. In making such comparisons we may lose preciseness but gain in understancing if we consider changes in certain broad institutional framework in terms of their distributive effects, taking account not only of several possible ways of constructing size distributions but also giving special attention to the broader meanings of the term income inequality and to the closely related idea of income insecurity.

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The idea that market direction under capitalism compounds a "original" inequality based upon innate differences among people deeply rooted in social thought. The prevalence of this idea reflect the influence of Rousseau and the other natural law theorists and the persuasiveness of the Marxian case for associating capitalism with increasing inequality. Marx observed and foresaw an evolutionar process in which there was a sharp reduction in the proportion of selemployed, a breaking down of the privileged positions of artisar and middle-class functionaries via specialization of tasks, and cumulative concentration of wealth in the hands of a few families who ow all, earn most, and decide everything. Sociologists and others hav

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urged the view that a similar pattern of increasing inequality is possible in dynamic noncapitalist societies.

Recent studies suggest that the influence of economic development upon income inequality may vary with the phase of development. Presently inequality is more marked in some of the so-called "underdeveloped" economies (at least by some measures) than in the developed economies and it appears that inequality is diminishing in recent years in the more advanced countries. Kuznets remarks that "it is . . . possible that much of Marxian economics may be an overgeneralization of imperfectly understood trends in England during the first half of the 19th century when income inequality may have widened; and that extrapolation of those trends . . . proved wrong because due regard was not given to the possible effects upon the economic and social structure of technological changes, extension of the economic system to much of the then unoccupied world, and the very structure of human wants."

It may be that capitalism puts out its own fire of increasing inequality with a long swing from less to more and back to less income inequality. Some understanding of this possibility is afforded by inquiry into the changing relationship among the several sectors of the economy. Consider the rural-urban or agricultural-nonagricultural division. One of the earmarks of development is the decline of the proportion of the population in rural pursuits and the rise of nonagricultural employment. Many students have commented upon the relationship of these sectors, the general conclusion being that the movement from rural to urban situs and the greater degree of inequality found in the urban situation will result in greater inequality over all. Thus, in discussing a related point, Copeland argued that since inequality increased with city size, "the movement of population into metropolitan communities has been a factor making for increased inequality of incomes and that without this population movement the inequality of incomes would have decreased during the past twenty odd years."2 Yet there is the puzzling fact that movement is from the lower income sector to the higher income sector, which would suggest that inequality might be narrowed by the population shift.

Kuznets takes up this puzzle and demonstrates that in the process of shifting the proportion of the rural sector downward there will be a peak of inequality reached, following which inequality will narrow. In his model the shift of the population from 80 per cent agricultural to 60 and 50 per cent agricultural results in widening inequality, while

Review, March, 1947, p. 61.

<sup>&</sup>lt;sup>1</sup> Simon Kuznets, "Economic Growth and Income Inequality," American Economic Review, March, 1955, p. 27.

<sup>2</sup> Morris A. Copeland, "Determinants of Distribution of Income," American Economic,

the move from 50 to 20 per cent agricultural yields narrowing inequality. This widening and subsequent narrowing of inequality will be experienced without any diminution of the per capita income differences between the sectors and without any change in the income dispersion within either sector. If there is a rise in the relative income position of the agricultural sector, further equalization will be accomplished.

It would seem that the movement among several sectors has in recent years worked in this direction of narrowing inequality. Thus the market has swept large numbers out of agriculture and large numbers out of home production. (The home production shift is perhaps on the widening phase of the swing, but there is an illusion of income equalization to the extent that we do not count the home production in income data.) Another important sector change has to do with increase in government employment, which moves the over-all distribution toward equality since there is less wage and salary dispersion in government and no personally received property income in that sector.

Movement among the several nonagricultural industries in the private sector can also have an effect on the over-all income inequality. It is possible that this has been the case in recent years although there is no very-firm evidence to support this view. Both Miller and Conrad have examined the shift in industrial allocation between 1939 and 1949 in these terms. It could be that some other type of sectoring of the private economy would reveal an important factor thus far overlooked.

A related matter is the effect on inequality of shifts in the occupational composition of the labor force. Recent years have seen a great and non-Marxian change in the shape of the occupational "pyramid." Between 1910 and 1955 the percentage of workers in unskilled employment was cut in half, the percentage in semiskilled work rose by 50 per cent, the percentage in white-collar work doubled, as did the percentage in the "professional, technical and kindred workers" classification. This change is clearly such as to encourage a narrowing of income inequality.

A further related matter is the shifting difference in rates of pay within and across occupational and industrial groups. Miller found this to be much more important in explaining the 1939-49 decline in inequality than the shifts in occupational and industrial composition of the labor force.<sup>5</sup>

<sup>\*</sup>Kuznets, loc. cit., pp. 12-18.

'Herman P. Miller, "Changes in the Industrial Distribution of Wages in the United States: 1939-49" (National Bureau of Economic Research, Conference on Research in Income and Wealth, 1956, mimeograph). Alfred H. Conrad, "Structural Change, Labor Utilization, and the Inequality of Wage Incomes," Econometrica, July, 1956.

'Herman P. Miller, Income of the American People (New York, 1955), Chap. IX.

The changing pattern of pay differentials and occupational composition is related to the changing role of labor specialization. With specialization there may be a widening-narrowing effect similar to that noted above in connection with the several sectors. Many authors have argued that specialization produces inequality. It reduces the middle jobs to routine and modifies the advantages of the skilled craftsman. At the same time, it may enable a greater performance spread between the mediocre and the superior worker. Thus Lachmann asserts:

No thinking person can fail to notice that as societies become more civilized, inequalities are bound to increase. This is a simple corollary of the division of labor. As this reaches ever higher degrees, individual contributions to the social product become more and more specific and thus less substitutable. For is it not an accepted maxim of economics that the division of labor enables everyone to give of his best, and that, as it is carried to higher degrees of complexity, this individual and highly specific "best" tends to become very much better than anybody else's best in the same line?

This proposition about the effect of specialization on income inequality deserves further scrutiny. First, the process of specialization, aided by growth in the size of firm affects the higher paid occupations (including supervisory and managerial and professional occupations) as well as the middle jobs. The market produced extraordinarily high managerial incomes when the entrepreneur was a single individual, when a peculiar combination of abilities was in demand for breaking barriers to progress. Now, however, it may be argued with Schumpeter that enterprise and progress are routinized by committee; innovation is accomplished by design, with tasks delegated among a team of special sits, every one of whom is a replaceable part. Hence relatively lower managerial incomes are rationalized.

Increasing the dispersion of pay within one job classification may be offset by reduction in dispersion within others. That is, the greatest dispersion of rewards may be found where combinations of talents and skills are required for good performance. (Consider the case of the Olympic Games. Do you get a greater inequality of reward with specialization by events than with requiring each entrant to compete in several events as in the decathlon? Reflection on this suggests that the higher level of performance in one event and greater dispersion in performance in each event does not necessarily mean increased inequality over all.) Further, specialized equipment may actually eliminate many of the lower skill jobs and increase the number of higher paying middle jobs. Again, this process can only go so far before all lower jobs are eliminated and it may be offset by the creation of higher skill jobs. (Perhaps we are currently seeing the formation of a new labor elite in the "professional, technical and kindred" category.) Market directions of the contraction of the c

<sup>&</sup>lt;sup>6</sup>L. M. Lachmann, "The Science of Human Action," *Economica*, November, 1951, p. 426.

tion means responsiveness both to shifts in consumer tastes and to changes in technique. Such direction yields a process of creative destruction which is the great enemy of vested interest in property as well as in labor skill. It gives preference to the young and adaptable and those with the latest in knowledge and minimizes the significance of accumulated property and age and experience. We conclude, then, that increasing specialization does not lead inevitably to increasing inequality of income.

In summarizing the discussion of market direction, we have noted that shifts in the importance of the several sectors, changing occupational composition of the labor force, and changes in job content due to specialization have been such as to make the present era of advanced capitalism one in which at least some of the market forces have pushed up an income-inequality narrowing wave.

#### II

While it is true that the free market has some forces working for a leveling of earner incomes, it is also true that dependence on the market for income results in irregularity and uncertainty in the receipt of income. The individual who is drawn from self-sufficiency is peculiarly vulnerable to shifts in market direction. Each family must run the gantlet of the four great hazards to family economic security: unemployment, disability, loss of breadwinner, and old age, each of which has a new and different meaning in a market-directed economy.

The earner distribution of fully employed men may have considerable symmetry, and yet the manner in which people are thrown into the no-earner category for short or prolonged periods may produce a feeling of malaise which arises more from insecurity than from inequality.

The first level of defense against no earnings due to these hazards is the family. Historically the family has functioned as both a producing and training unit as well as an agency which redistributes income to nonearners. In the transition from a rural to an industrialized, urbanized economy, the three generational functional family is weakened as an economic unit. The family is no longer a group engaged in joint-effort production and vocational training of children. In this shift from rural to urban ways of life, children and old people are transformed from "assets" into "liabilities." The requirements of geographic mobility and of adaptation to new occupational situations reduces the connections across the generations, and the possibilities for economic independence of women weakens the marriage bond.

While all this is true, it is also true that the family is still our principal redistributive agency and the most important connection between 70 million active earners and the total population of 168 million people. This redistribution may be said to be effective if the family is able to offset inequalities in the earner distribution and abate the uncertainties of the four hazards. In the same sense that market direction produces a historic peak of inequality it may be that the family does, too. It is argued below that the American economy may have passed that peak with the family now working to abate inequality rather than to aggravate it.

At the present time incomes are combined in such a way as to yield a family distribution of income less unequal than the earner distribution and, since family size is positively associated with income through much of the range, the family distribution overstates the inequality among the family members. That is to say, there are more people in the high income units than in the low. In 1950 the top 10 per cent of income receiving units contained 12 per cent of the people while the lowest (in terms of income) 10 per cent contained only 6 per cent of the people. This association of income and family size is the result of a combination of factors including the age of parents, the life cycle of earnings, fertility by income groups, and multiple-earner status. The average family size has been steadily declining for a long time in America, and there are now more people per family at work than was true before World War II. This is particularly true in the highest quintile, in which the average number of workers per family used to be one but now is two.

It may be that the old proposition about the rich being out-reproduced by the poor is in process of being negated. Westoff summarizes the findings on differential fertility in the United States as follows:

The general censensus of demographers and other observers of population phenomena has been that differential fertility among various groupings within the American population has been in a process of contraction during recent decades. . . . Should this trend continue in the future, students of differential fertility some day may well be seeking explanations of a direct rather than an inverse relationship between education, occupation and fertility.

With all the changes in the relationship between family size and income, it is still true that family size is an important factor in determining level of living. At any moment in time children are heavily concentrated in a minority of families. If families were reranked on the basis of income per person, the lowest deciles would be dominated by the families with children. Such a ranking dramatizes the concentration in any given year of the responsibility for investment in children and also the fact that the leading economic function of the family today is directing the consumption and training of the child.<sup>8</sup>

<sup>&</sup>lt;sup>7</sup> Charles W. Westoff, "Differential Fertility in the United States: 1900 to 1952," American Sociological Review, October, 1954, p. 561.

<sup>8</sup> Hazel Kyrk, The Family in the American Economy (Chicago, 1953). "The parents who

#### INCOME DISTRIBUTION

In the present market the family may be more able than in the r past to offset loss of earnings by the breadwinner. Increasing opporties for women to work and the rise in numbers of children age teen to twenty-one who are in school means that many families h potential for labor income which may be drawn on in time of gency. At the same time, the smaller size of the average family an virtual elimination of the three-generation family means that man exposed to greater risks from income loss than was true fifty year.

While recent developments suggest some moderation, the corporary American family has still not been able to adjust itself t increased risks of income loss. To this extent the family has "b down" as a redistributive agency. Where the family was once a ducer unit able to "insure" its own risks, it is now more and more a consuming unit, wherein the function of redistribution is la confined to the transfer from parents to children. For redistrib from young to old and from well to sick and from employed to a ployed, the present-day American must look to institutions of the family. Among these is the employing firm.

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De Jouvenel, in his book on Ethics of Redistribution, has sugg that the family as a consuming unit is being replaced in part b business firm, wherein we have institutionalized and collectivized sumption. In response to the urging of employees, unions, and go ments, the employer now redistributes the costs of insuring as hazards to continuity of worker income. While the emphasis is a this of course is not an entirely new function for the employer. responsibility of the employer for loss by employees under the doc of social fault goes back a long way in tort law. This is the idea the price to the consumer should "pay for the blood of the wor Beginning with liability for accidents arising from the negligen the employer, the law has delineated an increasing area of emp responsibility. By statute and by private rule making in which u are commonly a party, this area has been further enlarged so the employer now participates in protection against the risks of old occupational and nonoccupational disability and unemployment.

The business firm is functioning as a transfer device and not philanthropic agency in most of these programs. Group insurance cally favors the lower income earners in the group, the greater me

were caring for one or more children under eighteen (in 1948) represented a litt two-fifths of the total population eighteen to sixty-four years of age, and slightly than one-half of those of that age who had ever been married." (P. 30.) See also I 81.

and accident risks, the ones most likely to be unemployed. Similarly, "private government" union-management arrangements about entrance to and sharing of the job territory typically favor the least advantaged in the group.9 This is the extension of the family ethic to the business firm and the union. Trade-unionism may be characterized as a reaction to or protest against market direction's threats to well-established differentials in income. It is typically an exclusive movement aimed at giving preference to "regular" workers and those having seniority. The method used is the "legislating" of control over hiring, discharge, retirement, promotion, and transfer. As far as effect on wage structure goes it may be that, as Reynolds argues, unions merely confirm the general tendencies of the competitive market to yield equal pay for equal work across firms and regions. However, since entry and job tenure are considerably altered by unionism it is no doubt true that the distribution of income is altered. It should be borne in mind that union members are, generally speaking, in the upper half of the income distribution. It may be that union-management policies as regards wages, fringes, and administration of job rights spread income more equally among a relatively high income group.

There is yet another way in which the business firm functions in the redistribution process. This is in changing the form of income. Commutation of earnings into money was a long process in the history of capitalism, but we now seem to be going the other way, partly in response to high progressive tax rates and partly due to economies of large-scale purchase. The changing of the form of income is more like a chemical than a mechanical process, but it too has redistributive or anti-redistributive effects when set against the tax system. One byproduct of this "chemical" process is an increasing distance between the total money income distribution and the "real" distributions of income which would accurately measure either the distribution of "producer contributions" or "general market power."

While recent changes in the policies of employing firms have encouraged income continuity, it is not altogether clear yet what long-run effects upon income inequality may follow from extension of such policies.

## IV

Government enters the picture as a force in redistribution in a wide variety of ways and with a wide range of effects. In its role as rule-maker, promoter, and regulator of business, it affects the earning power of talents, training, and property. As employer, purchaser, and competitor, it influences prices and incomes. Similarly, in its proprietary

Selig Perlman, The Theory of the Labor Movement (New York, 1928), pp. 237-279.

role of supplying services, it alters the primary distribution. Perhaps the most effective redistributive act in this category is the provision of free public education which narrows wage and salary differences by decreasing skill scarcities and by encouraging a uniformity of goals and motives. Also important is government action in protecting and strengthening the family as a legal entity and even playing the role of family member in some contingencies. We have already mentioned government influence in defining a new role for the employer with regard to continuity of income. In recent years governments have become more important as redistributors of income via transfers.

A number of careful studies have been made of the effect of government fiscal activity on the distribution of income among spending or family units. They all show that the federal-state-local tax system is progressive and that the benefits of government spending accrue to the lower income groups in higher proportion to income than is the case with higher income groups. Hence, it is concluded that the government fiscal policy contributes to equalization of income.

Two remarkable findings of these studies are worth special mention. One is that the pattern of equalization via public finance is strikingly similar prewar and postwar. The other is that the tax system shows only very moderate progression over the income range within which the lower nine deciles of income receivers are to be found. Thus Musgrave found the effective rate of all taxes in 1954 was 23.4 per cent of income for the under \$2,000 bracket and 30.8 per cent for the \$7,500 to \$10,000 bracket.<sup>10</sup>

In appraising both the above stated findings it is important to recall the fact that the relationship between family size and income has been significantly altered since before the war. At the present time, since there are more people in the upper than in the lower brackets, it may be concluded that a statement of "income bracket progression" will understate the "real" tax progressivity. Alternatively, one may look at it this way. Families of different sizes may be placed in "equivalent income groups" and effective rates of tax may be calculated for each family size in each group. This method reveals a family allowance effect in the tax system arising out of the personal income tax exemptions. This effect is masked in the income bracket measure of progressivity. The family allowance effect is hard to reconcile with the income equalization measure since it is capricious with respect to that measure. Other capricious results are entered by shifts in the form of income, such as conversion of ordinary income into capital gain.

<sup>&</sup>lt;sup>20</sup> Richard A. Musgrave, "The Incidence of the Tax Structure and Its Effects on Consumption," in Federal Tax Policy for Economic Growth and Stability (Joint Committee on the Economic Report, 1955), pp. 96-117 Table 3.

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It is also important to note that social insurance contributions (which are regressive taxes) are a leading reason for the fact that such a slight degree of progressivity is found. In the Musgrave study, the effective tax rate for the under \$2,000 bracket falls when social insurance contributions are excluded from 23.4 per cent to 19.9 per cent. This illustrates the remarkable degree to which we have separated the notion of equalizing from the idea of insuring continuity of income. There is no easy answer to the question of the proper way to appraise the equalizing effect of the system of contributions and benefits when one group is paying and another receiving. But if the taxpaying group is considered alone, it is legitimate to consider their contribution as a consideration for insurance protection, which has value whether the individual ever collects benefits under it or not. And only in this view can one see the equalization effects from favoring low income earners and those with families written into the benefit formulas in the several social insurance programs and see the differing value of insurance protection purchased by a standard per cent of income premium.

However, the overriding rationale of social insurance is not income equalization but maintenance of the status of regular workers with benefits varied by average earnings, with contractual right to benefits on the basis of presumed need in stated contingencies, and with concern for prevention of the hazards.

#### V

It may be concluded that some of the changes in the institutional framework have been such as to accommodate a capitalism without increasing inequality. The basic change has been the sweeping of larger and larger parts of the adult population into the sovereignty of the market and hence into a sharing of the same way of life. This is the overriding fact of economic equalization in our time. When appraising government equalization programs, it is important that we see the change of institutions toward income distribution in line with the family ethic as bearing contrapuntal relationship to the main theme of market ascendancy. Wise management of these programs can make contributions to the national economy and to the dignity of individual human beings.

## DISCUSSION

HOWARD R. BOWEN: The two excellent papers we have heard fit together neatly. Both of them deal with long-term changes in the distribution of income and both speakers seem to agree that there are observable trends in the American economy toward greater equality of income. Mrs. Goldsmith has ably summarized the statistical evidence for this conclusion, and Mr. Lampman has rationalized long-term changes in income distribution in terms of underlying institutional and structural changes.

Both Mrs. Goldsmith and Mr. Lampman are well aware of the many statistical and definitional pitfalls in the interpretation of statistics on changing distribution of income. Both commented on the fact that some of the change may be ascribed not to secular trend but to differences in the degree of general economic activity during the period under observation. On the whole, we are comparing data for the thirties, when there was deep depression, with data for the forties and fifties when there was full employment or even inflation. Our principal bench mark representing a prosperous prewar period is the single year 1929. Therefore, until we have more evidence extending beyond a single business cycle, we must be cautious in accepting the thesis that income distribution has become significantly more equal. This is especially so since much of the observed change in income distribution occurred during the early war years when the economy was being transformed from underemployment to full employment. As Mrs. Goldsmith points out, "since 1944, there has been little change in the relative distribution of family income. . . ."

Having uttered this word of caution, I can think of factors, additional to those mentioned by Mr. Lampman, to rationalize the apparent tendency toward greater equality.

First, the level of public health has been steadily improving. As a consequence the physical energy of the population has probably become more equal and the irregular employment and unemployability associated with ill-health have probably become less acute. Second, unassimilated immigrants have been a steadily diminishing proportion of the population. Third, progress has been made in overcoming occupational barriers due to race and religion. Fourth, the mobility of workers and of industry has been increasing. All of these factors, I think, are fully as significant as the structural and institutional changes cited by Mr. Lampman. I would also give more emphasis than did Mr. Lampman to progress in education which has undoubtedly reduced differences in ability to earn. One of the paradoxical effects of education is to raise the earning power of the uneducated.

My final comment is that despite improvements in income distribution and even after an unprecedented period of great prosperity, there is still a hard core of genuine poverty in the United States. For example, in recent years nearly five million families have qualified for various forms of direct assistance. According to the last census, there were over 6,700,000 houses without

running water and 4,300,000 houses classified as dilapidated. There are still millions of workers receiving wages of less than \$1.00 an hour, or annual incomes of less than \$2,000. Thus, even if the long-term trend is toward greater equality, we cannot assume that this trend will solve the pressing economic problems of millions of families.

George Garvy: In dealing with the problem of redistribution, Lampman envisages three layers of income distribution: First, an "original" distribution, in which inequality is based on innate differences of ability. Second, a market-directed distribution of producer income which reflects the play of market forces against the background of a given distribution of assets, acquired skills, and various constraints of our modern society. Finally, a consumer income distribution which is, in part, the result of a redistributive process. Lampman focuses on the contribution of three institutions to this redistributive process: the family, the business firm, and government.

The role of government in the redistribution of income—which is the subject of much of the recent research on this subject—is well established. It affects income distribution primarily through taxation and transfer payments. The result is a distribution of consumer income which is somewhat more equal than that arising from production. Government also affects the distribution of producer income directly—as a buyer of products of the private sector, as an employer, and in other ways—but these activities affect the distribution of producer income rather than its redistribution.

I doubt that much light is shed on the dynamics of income by treating the family as a redistributive agency. The family, except in parts of the agricultural sector, is mainly a consuming unit. The pooling of income derived by the various members of the family from economic activity yields a distribution of consumer income markedly different from that of producer income. The way in which such individual incomes are combined, their sources and form, their continuity, and the number of nonearning dependents are among the most significant determinants of the family's plane of living. But I believe that an analytical distinction should be made between a redistribution of income produced among consumer units and the sharing of family income among its members.

Even in the limited field in which the family intervenes directly in the distribution of producer income, some of the recent changes are more illusory than real. When property is split among members of a family and separate trust funds are set up in order to meet various family (including charity) obligations, the frequency distribution of income (particularly of property income) may be affected, but when such rearrangements of the income stream are made in the first place to minimize the impact of income and inheritance taxes, their economic meaning is limited.

Lampman's discussion of income redistribution through the business firm confuses redistribution among persons and redistribution over time. Business firms' contributions to health insurance and welfare funds may have some limited redistributive effects. But in postponing payment of a part of the

labor income, including executive compensation, either directly or by channeling it into social insurance or private pension funds, business firms achieve merely a redistribution of income over time, not among persons. In modern society, labor income, including executive compensation, tends to continue beyond the earners' working life; it is correspondingly reduced during the period when it is earned. When discussing redistribution, it is important to distinguish between transforming producer income of one person into consumer income of a different person on the one hand and changes in the timing of the flow of producer income on the other.

More significantly, the corporation—and the business firm in general—increases the dissimilarity between the distributions of income produced and of consumer income by accumulating undistributed profits and thus transforming part of the property income into assets. This is an important aspect of the economic process, but again I doubt that it belongs to the category of redistribution.

Parallel to Lampman's concern with redistribution is his stress on security and continuity of income. He suggests that the informal insurance provided by the three-generation family is an important element in appraising income status. I believe that he does not lay sufficient stress on the fact that in spite of the lessening protective significance of the large family, the living standard of the average family is now better than ever protected against economic vicissitudes. Temporary loss of income because of unemployment, disability, or sickness is mitigated by the various types of government and private insurance. A wide range of free government services continues to be available to those who suffer a loss of income. The burden of unproductive dependents is lessened by old age insurance, the coverage of which has become almost universal. Finally, ownership of consumer capital continues to yield a substantial flow of services to many families that experience a temporary interruption of the income flow.

Suppose a sharp decline in business activity occurs in 1960. Suppose, furthermore, that to discharge its responsibility under the Employment Act, the federal government hires a few statisticians released by private industry and assigns them to Mrs. Goldsmith's staff. Their task will be to recompute personal income by treating automobiles and all other consumer durables in the same way as owner-occupied homes. I venture to guess that in a depression year the distribution of family personal income on the new basis will be more equal than when computed in the current manner.

All this supports the view that distributions of annual consumer income are a rather imperfect guide for studying differences and changes in the plane of living. In addition to current income, the stock and the distribution of service-yielding and of income-yielding consumer assets are relevant, as well as past incomes and even expected future incomes within a certain time horizon. Less generally recognized—but rightly stressed by Lampman—is the importance of claims against government and private insurance and pension funds and other intangible assets, as well as the availability of free government services.

Thus in modern society the individual's plane of living is increasingly determined by the institutional framework rather than by the amount of currently received income alone. But even for current income, Lampman draws our attention to the reversal in the process of the commutation of income in kind into money income, which was one of the striking features of the rise of the capitalist society, and to its growing importance in advanced capitalist societies. For tax and other reasons and by the use of devices mentioned by Mrs. Goldsmith and by other techniques, an increasing proportion of the compensation for productive services is paid in forms which bypass the tax collector, being either transformed into assets or disguised as business expense.

Mrs. Goldsmith is probably right in doubting that income made available in these forms to the uppermost 5 per cent of the population is anywhere near the amount of money income which would be required to restore their share in the personal income to the 1929 or even to the 1939 level. The significant point, however, is that at the time when, largely due to the efforts of Mrs. Goldsmith and her associates, decisive progress has been made in constructing size distributions of personal income among consumer units, money income and those types of income in kind which are now included in personal income cease to be fully indicative of either total compensation for productive services or of the purchasing power of the consumer in the market. Perhaps there is a counterpart to the Kuznets-Lampman hypothesis of a long swing in inequality as modern society emerges from the agricultural economy and moves to successively higher forms of economic organization. The original increase in inequality was associated with, and reinforced by, a shrinkage of income derived outside the market sphere or received in kind. The subsequent. trend toward greater equality seems to have been associated with, and in part offset by, a relative growth of the nonmonetary elements of income. As Mrs. Goldsmith indicates, this hypothesis still needs to be quantified, while Lampman rightly raises the question whether the observed narrowing of relative income differences represents a long-run trend or a reversible cyclical phenomenon.

I would like to comment on two specific points made by Lampman. One relates to the effect of specialization on inequality. Among the several arguments which he brings to bear against the traditional view that specialization produces inequality, the one which points to the elimination of many low-paying jobs through the use of specialized equipment appeals to me most. In many discussions of specialization, the emphasis has been on the differentiation of skills rather than on the link between specialization and mechanization. In the older discussion, the focus was on the widening of the gap between the unskilled jobs requiring a minimum of intelligence and a maximum of physical effort and the complex skills of the highly trained technician. Mechanization and automation have eliminated a good number of jobs tailored for the human automat. Advanced capitalist societies seem to be moving in the direction of aggregates of specialists. You can put it in a different way by saying that a more capital-intensive economy creates a more equal distribution of skills and of labor income.

One important contributing factor to the equalization of skills and greater equality in the distribution of labor income, as documented by several of the studies referred to by Mrs. Goldsmith, was free public education. I agree with Lampman that free public education has been perhaps the most effective vehicle counteracting tendencies toward income concentration. This suggests that the dividing line between the distribution of producer income and its redistribution is perhaps less clear cut than frequently assumed in public discussion. Specific institutional arrangements influence the shape of the primary distribution before any redistribution through government takes place. Free public education is one of such institutional factors. Tax-exempt securities are another. Abolish the tax-exemption privilege of municipal securities and the interest component of property income will rise immediately. The focus in Lampan's paper is on institutional arrangements affecting the redistribution of income. I would like to suggest that the market-directed distribution of producer income itself already reflects specific institutional arrangements.

I would like to conclude by suggesting that the starting point for any meaningful study of redistribution of income should be a distribution of producer income. Clearly, for evaluating changes in the distribution of the fruits of economic activity, the relevant distribution is of producer income among persons who contribute services or property to the production process. Yet much of the growing literature on the extent and causes of changes in the equality in income distribution in the United States is based on size distributions of consumer income among spending or similarly defined units.

The absence of an adequate distribution of producer income among individuals is the greatest single gap in our knowledge of the income structure in the U.S. Such a distribution, in addition to being a take-off point for studying the process of redistribution, would establish a bridge between functional and size distribution of income. It would also help to trace changes in the purchasing power of consumer units to changes in the earning power of individuals.

The appropriate unit of distribution of producer income is the individual earner or recipient of property income. As a matter of fact, a case can be made for extending such distributions to individuals who are willing and able to work but who are unable to do so because of lack of employment opportunities.

In such a distribution, labor income should be defined to encompass all types of compensation, irrespective of whether it is received currently (in money or in kind) or deferred. I do not see how a reconsideration of the definition of the income in kind can be avoided when making estimates of producer income in an expense-account economy.

One of the important questions to which a distribution of producer income must seek to provide an answer is whether the observed trend toward greater equality in the distribution of property income represents basic structural changes in the distribution of fruits of economic activity (and, if so, to what extent) or merely the recipients' efforts to minimize the impact of progressive income taxation. Perhaps a regrouping of the undistributed income of

personal trust funds, and of their income distributed to tax-exempt institutions, with the income of the creators of such trusts would help in such a study.

I do not know whether or not changes in the size distribution of producer income among persons since 1939 will prove to be as striking as those of family personal income among consumer units. Mrs. Goldsmith's findings on changes in the distribution of national income, as contrasted with family personal income, suggest that much of the apparent shift in the direction of greater equality would disappear. In any case, an analysis based on changes in the distribution among persons of income conceptually related to factor earnings is likely to contribute more to the understanding of forces shaping changes in the structure of income (including consumer income) than statistics and analyses which fail to distinguish between income arising from participation in economic activity and redistribution as a result of public policy.

Henry C. Taylor: It is gratifying that income distribution has been given a place on the program of the American Economic Association. What I have to say relates to the interoccupational distribution of the national income. This is a question vital to the future character of our national economy. The papers which have been presented at this meeting indicate that there is considerable difference in the rate of compensation received for equivalent contributions to society by the various occupations. We assume this to mean differences in income of persons of equivalent ability, skill, and activity. While the papers clearly indicate the presence of inequalities, they also indicate the lack of adequate information on this subject. Such evidence as is available leaves room for doubt as to the extent of these differences, and little evidence is available as to the causes. The need is for more light on this subject.

Much attention has been given to one phase of this subject in the past thirty-five years—namely, the share of agriculture in the national income—and as yet no adequate study has been made of the extent or of the causes of such discrepancy as may exist. In the meantime, the share of agriculture has become a political issue, men of action have prescribed and proceeded to apply remedies which have resulted in maladjustments in agricultural production, made a heavy cemand upon the United States Treasury, and caused deep concern on the part of the agricultural interests in foreign lands. In the meantime, economists have stood by and protested, but few of them have made any effort to throw light on the pathway of the men of action.

Since the starting point in solving any problem is a careful study of the causes of the difficulty, it is obvious that the interoccupational distribution of the national income should be studied in a comprehensive manner from the standpoint of the whole national economy. Agriculture is just one of several occupations where the fairness of the distribution of the national income is being questioned.

While the first step is to get at the facts as to the extent of such dis-

crepancies as may exist, the second step—that of ascertaining the causes of inequities—is even more important in finding the right solution of the problem. It is only when the extent of the discrepancies has been determined and the causes understood that we may reasonably expect programs of action to be set up which will take care of the discrepancies without damage to the national economy.

The intergroup struggle and class legislation, where the effort is to solve the problems of one occupational group without regard to the welfare of other groups, are in danger of doing more harm than good. I suggest that a committee of this Association or of the Social Science Research Council work out a plan for getting the facts and exploring the causes of inequities in the interoccupational distribution of the national income. The subject should be approached from the point of view of the whole national economy. The leader should be a general economist in the sense that he attempts to hold in mind the whole national economy in its international setting. He should have the help of specialists in the various techniques of research and specialists in the various fields of economic research. These specialists, as well as the leader, should be ready to seek the truth without class bias. Through this approach the economists may make a contribution to the general welfare worthy of their profession.

# CONSUMERS IN THE AMERICAN ECONOMY

#### CONSUMPTION PATTERNS AND PERMANENT INCOME\*

By IRWIN FRIEND AND IRVING B. KRAVIS University of Pennsylvania

In recent years two new theories of consumption or saving have been propounded by Messers. Friedman and Modigliani and Brumberg<sup>1</sup> which while addressed particularly to the demand for consumer goods and services as a whole—i.e., the problem of the consumption function -also have implications for the statistical derivation of demand relations for individual items of goods and services. The main purpose of this paper is to analyze the new theories and to subject the theories and their implications to empirical tests.

### Consumption Theory and Permanent Income

According to Friedman, consumption for a family or for the economy is k times "permanent income"—discounted, expected income—where k, and therefore the ratio of consumption to permanent income, is independent of the level of permanent income but is a function of the interest rate, the ratio of assets (net worth) to permanent income, and tastes. (Among the factors affecting tastes, Friedman mentions age and composition of family and income variability.) According to Modigliani-Brumberg, consumption is again (under assumptions they consider most plausible) a linear, homogeneous function of income—in this case current and expected incomes—and of assets. Modigliani-Brumberg assume lifetime planning, so that the parameters of the consumption function are determined by such factors as the length of the earning life, the retirement span, and the age distribution of the population, and consider that asset accumulation (and liquidation) is an integral part of the lifetime plan. Friedman's concept of the time period that is relevant to the definition of permanent income is different. It is the minimum period of time over which income influences must persist

<sup>\*</sup>This paper is based on research undertaken in connection with a broad Study of Consumer Expenditures, Incomes and Savings at the Wharton School of Finance and Commerce of the University of Pennsylvania. The study is based largely on the 1950 survey of the Bureau of Labor Statistics of 12,500 families in 91 representative cities, and is being or the Bureau of Lador Statistics of 12,500 families in 91 representative cities, and is being carried out in co-operation with that agency. It is financed by a grant from the Ford Foundation. The authors of this paper wish to acknowledge the helpful comments by their colleagues, Professors Sidney Weintraub, Jean B. Crockett, and Stanley Schor.

<sup>1</sup>M. Friedman, A Theory of the Consumption Function (National Bureau of Economic Research, forthcoming). F. Modigliani and R. Brumberg, "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data," in Post Keynesian Economics, ed., K. K. Kurihara (New Brunswick, N.J., 1954).

before the income recipient will regard them as permanent. On empirical grounds, Friedman estimates this period to be three years.

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While there are significant differences between these two theories. they are sufficiently alike in their approach and broad implications so that they can be treated together for brevity in exposition. They attempt to build up a simple model of rational consumption or saving behavior by assuming that a basic reason for saving in any period is to smooth out (though not necessarily equalize) consumption over a planning period which is longer than the conventional annual accounting period. Both formulations, it should be noted, treat net investment in consumers' durables as saving rather than consumption. A second reason for saving allowed for in the two theories is to receive an interest or other return on assets, though the interest rate plays a significantly different role in the Modigliani model as a result of the assumption of lifetime planning. The estate motive is a third reason for saving explicitly considered by Modigliani but not by Friedman. A fourth reason for saving—uncertainty about future income and needs requiring a reserve against emergencies—is allowed by Friedman to influence the level of k (through the effect of the assets-permanent income ratio and income variability) but is not permitted to alter the saving-income ratio as between different income levels. (Friedman seems to ascribe a central role to uncertainty in the net accumulation of saving.) Modigliani-Brumberg make no allowance for uncertainty, stating that "the presence of uncertainty is unlikely to generate a saving behavior significantly different from that arising in a world of certainty."

In some respects, the theories and empirical implications are not very different from preceding theories and statistical constructs. For example, abstracting from uncertainty, if the level of income and the size and age composition of the population remain fairly stable, the dissaving of the retired would be expected to offset the saving of vounger persons so long as estates are neglected or remain constant in size. Under such circumstances, the annual saving of an individual family during the working life of its head or dissaving after the head's retirement can be determined by its average income, length of life, and working span, while the national saving is, of course, zero. If income increases steadily but the size and age composition of the population are stable and estates can be neglected or bear a constant relation to income, the level of national saving is related to the annual rate of change in national income. Or if income per consumer unit remains constant but the number of consumer units increases, the level of national saving is related to population growth. So far, the conclusions are not particularly new.

The theories do, however, lead to new conclusions as a result of two

additional restrictive assumptions. The first of these is that transitory components of consumption and income are uncorrelated, or, in other words, that the difference between current and permanent income (viz., transitory income) is completely saved (Friedman) or almost completely saved (Modigliani-Brumberg). In the Friedman formulation the data are permitted to determine the time span for which incomes are relevant to the definition of permanent income while in the Modigliani-Brumberg formulation lifetime planning is implied. A priori, the influence of uncertainty casts some doubt on the usefulness of the concept of lifetime planning, but even with a shorter planning period, one may question the validity of the assumption that consumers save all windfall income. While it does seem plausible that the resources relevant to determining the level of consumption cover a period in excess of the current year or the current and preceding year—two of the most common assumptions in prior empirical investigations of consumption—only a careful statistical examination of the data can indicate how much is added to the usual explanation of consumption behavior by introducing a longer span in the manner suggested by either Friedman or Modigliani-Brumberg.

The second major restrictive assumption made in these two new theories is that the proportion of planned consumption to expected resources is independent of the level of expected resources, so that the top income groups save the same proportion of their average, expected, or permanent income as lower income groups. It is this assumption which imparts to the two theories some of their most significant implications such as the secular constancy of the consumption-income ratio. (In the Friedman version, constancy of the ratio also implies stability or offsetting effects in the factors affecting k.) Modigliani and Brumberg (but apparently not Friedman) are somewhat concerned with the implication of this assumption once the estate motive for saving is considered but point out that it is possible for accumulated saving to be a linear, homogeneous function of resources for all families combined—i. e., for the saving-income ratio to be independent of the level of income—even though this is not true for individual families.

To a greater extent than the first assumption, the notion of a constant saving-income ratio for all permanent income levels is subject to serious reservations on purely deductive grounds. In terms of time preference, the permanent income hypothesis implies that low-income families will have no greater preference for present over future goods than will high-income families. It is, of course, possible to draw an indifference map in such a way as to indicate that time preference for a given individual or family is invariant to income. It is equally possible to draw the map so that the curves farther from the origin grow pro-

gressively steeper (present goods on the vertical and future goods on the horizontal axis)—thus indicating that at a given interest rate (price line) a family when on higher indifference curves would favor future goods more than when on lower ones. There is no way in strict logic to prove that one formulation is right and the other wrong, but we think that there are circumstances which create a presumption in favor of the hypothesis that the preference for future goods-and therefore the saving-income ratio—rises as the real income of the consumer increases. Very simply stated, our contention is that consumers at widely separated levels of income (used here in the sense of permanent income) are subject to very different kinds of pressures and motivations, and that these operate to keep the consumption of low-income receivers and the savings of high-income recipients high relative to their incomes. This is, of course, the orthodox position, but since it has been challenged, it seems necessary to examine the supporting argument which has seldom been spelled out.

Starting with low-income families and considering the matter in the most general terms it seems more plausible to believe that a family with low income will be subject to such physical, psychological, and social pressures to maintain a standard of living that is high relative to its income (though low relative to the community standard) that it will find itself able to devote none or at best only a relatively small proportion of its income to saving. As Irving Fisher observed, "a permanently small income . . . bears down heavily on all portions of a man's expected life. . . . But it increases the want for immediate income even more than it increases the want for future income."

The existence of uncertainty, which is inadequately treated in the Friedman and Modigliani-Brumberg theories, probably enhances the extent to which low-income families have a greater preference for present over future goods as compared to high-income families. When the future is clouded with uncertainty, the low-income family may trust to better fortune to provide for future needs and yield more readily to the pressures of immediate needs than it would if future needs and income were known with certainty. As real income rises and as successively less urgent wants are satisfied, the family is better able to allocate present resources for future needs even though both future needs and income are uncertain. This differential effect of uncertainty upon saving-income ratios for different income levels would appear to be accentuated by our present economy's social welfare standards which serve to minimize uncertainty as to maintenance of current levels

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<sup>&</sup>lt;sup>2</sup>Theory of Interest (1930), p. 72, Fisher's italics. For other judgments of a similar character, see J. R. Hicks, A Contribution to the Theory of the Trade Cycle (Oxford, 1950), p. 36, and J. M. Keynes, The General Theory of Employment, Interest and Money (London, 1936), p. 97. See also Keynes's "subjective factors," p. 107 ff.

of consumption and income for low-income groups without having a similar influence for the higher income levels. It must be added, how-ever, that there is some question about the effect of uncertainty upon saving-income ratios for different income groups owing to the flexibility of the concept of permanent income (particularly as used by Friedman). But if the concept of permanent income is too elastic—if, for example, the span of relevant years is a function of the level of "permanent" income—some question might be raised about the operational utility of the concept and in particular about the simple types of aggregation over different income classes implied in these new theories.

The new theories tend also to neglect the influence of past living standards of the family and current living standards of other families. With a rise in income, for example, consumption would be expected to take time to adjust to its new level; so that normally the saving-income ratio would be expected to increase so long as income keeps rising. It seems plausible that this consumption lag might be longest for those families already enjoying a higher than average standard of living.

Indeed, little attention is paid in the theories under review to the special position with respect to saving motivations of those with high or very high incomes. Such income recipients are confronted with vistas of motivation which are very different from those faced by lower income receivers and which operate to check the increase in consumption and hence to raise the saving-income ratio.

Let us consider first the special motivations that may apply to affluent men who have achieved their high-income status through their own efforts rather than through the efforts of their forebears. For many, success, whether won in business or in the professions, is attributable not only to skill and chance but also to perseverence, singleness of purpose, and the devotion of long hours of work and thought. Successful men are not infrequently those who have come to play the game not so much for the pecuniary rewards but for the other rewards that come with success. Thus for some the making of money becomes such an enjoyable and time-consuming pastime that it competes effectively with consumption, and the saving-income ratio rises by default as it were rather than by plan.

For the entrepreneurial group, where many and perhaps most highincome receivers are to be found, the concentration of interests and aspirations upon business adds a positive motive for restricting consumption in favor of saving and investment. The new theories give little heed to this enterprise or investment motive for saving despite strong evidence that entrepreneurial saving has long been high relative both to entrepreneurial income and to total personal saving. This phenomenon is not explained by the Modigliani-Brumberg theory of total personal saving and can be explained by the Friedman hypothesis only by assuming that the high saving can be attributed exclusively to greater year-to-year income variability of entrepreneurs or to higher rates of return on invested capital. As a result of the neglect of this motive for saving, neither theory considers the possible significant effect of cyclical fluctuations in entrepreneurial income on the aggregate consumption function.

The enterprise motive could perhaps be subsumed under a broader category of motives: those which center around desires other than consumption that are satisfied by the accumulation of wealth. Apparently neither Friedman nor Modigliani-Brumberg (particularly the latter) believe that accumulated wealth has much utility apart from its implications for future consumption of the family and its heirs. This abstracts not only from considerations of miserliness (which probably is no great cause for concern in a general theory of saving) but also from the more important considerations of independence, power, and prestige—all of which may be involved in entrepreneurs' high saving and may make for significant differences in saving-income ratios by income classes once a "minimal" standard of living is achieved. At very high income levels, for example, the income recipient may be induced by a desire to perpetuate his name to plan for the use of his resources beyond his lifetime through the endowment of some public service organization or institution. Partly as a result of the almost mechanical tie-in between current saving and future consumption (again particularly by Modigliani-Brumberg) attitudes toward consumption versus accumulation as exemplified by the social approval attached to saving in the Puritan ethic are given little role in determining the level of saving. Saving induced by such factors as the individual's desire for independence, power or prestige, or social pressure exemplified by the Puritan ethic may well be an increasing proportion of income once the more urgent consumption "needs" have been met.

Even if the reasons we have advanced for believing that the preference for present over future goods moves inversely with income are not accepted—even, that is, if time preference were regarded as invariant to income—the saving-income ratio could not be considered independent of income since neither the cost of nor return on borrowed funds is the same for different income groups. The effect of the higher rate of return on invested funds for upper income groups in encouraging saving—to the extent that it does have such an influence—is presumably not offset by the effect of the lower cost of borrowing in encouraging consumption of such groups both because the difference in return (as among income groups) is likely to exceed the difference in cost and because families as a whole, and particularly the upper in-

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come groups, are typically creditors. This possibility is not considered in either of these theories. However, if lifetime planning and no estate motivation are assumed, saving over the life-cycle would still be zero regardless of income. On the other hand, once estate motivation is introduced, a higher return on invested capital for upper income groups might also serve to raise their proportion of income saved relative to the rest of the population. It is interesting to note that a rise in the interest rate seems to have quite different effects in the Friedman and Modigliani models. In the former, the saving-income ratio is always increased; in the latter, which presumes a lifetime planning span, the ratio may remain the same or even be decreased, depending on whether the economy is stationary or growing and on whether it has adjusted to the changed interest rate. (In the Modigliani formulation, the result turns upon the relative importance of the impact of higher interest rates upon the saving of the young and the dissaving by the old.)

The foregoing remarks indicate some of our theoretical reservations to these two new theories. It is perhaps worth emphasizing that the theories acquire their relatively new flavor not by their adherence to generally accepted doctrine on consumers' choice but rather by reliance on special restrictive assumptions whose validity can only be demonstrated or disproved by empirical investigation. As far as a priori reasoning is concerned, we have argued that, with respect to the first assumption, it is not at all clear that individuals do not consume a significant fraction of an increment in income even if the increment was unanticipated and is not expected to continue. In regard to the second assumption, we have argued that the orthodox notions seem more reasonable than the hypothesis advanced by the new theories; that is, there are good reasons for believing that our Du Ponts, Fords, and Rockefellers save (and, even abstracting from capital gains, leave to posterity) a higher proportion of their income than their less affluent neighbors.

Both Friedman and Modigliani have carried out tests which they feel offer strong confirmation for their theories (even though we have noted that their theories are contradictory in certain respects). We do not believe that the tests provide convincing evidence that their theories are superior to the existing alternatives. However, if the theories were valid, they would have far-reaching implications; e.g., at a policy level that people in different income groups normally save the same proportion of their income, and at a technical level that income elasticities either of consumption as a whole or of expenditure groups derived from cross-section studies are seriously misleading since it is not current income which is relevant but rather income over some longer time span (which is assumed not too highly correlated with current income).

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With the availability of new data from the BLS 1950 Survey of Consumer Expenditures as well as other materials compiled in the Wharton School-BLS Study of Consumer Expenditures, Savings and Incomes, we plan to spend the rest of this paper testing some of the implications of these theories—particularly the Friedman version against the first comprehensive body of data on consumption patterns in the period after World War II. While the year 1950, on which our following analysis is based, was affected by the outbreak of the Korean war, the consumption-income ratio was not markedly different from earlier years of high economic activity but was higher than in subsequent years. Also, the composition of consumption was only moderately different from other recent years, although the relative importance of expenditures on autos and appliances was somewhat greater. Data on expenditures for automobiles and other durable goods for the first half of the year (i.e., pre-Korea) will be available separately at a later date

# Empirical Examination of Implications of Permanent Income Hypothesis

Total Consumption. In testing the implications of the permanent income hypothesis for the demand for consumer goods and services as a whole, we have confined our attention in this paper to these BLS-Wharton cross-section data. However, it should be noted that both • Friedman and Modigliani-Brumberg stress the correspondence between the implications of their theories for the relation of consumption to income and the findings not only from cross-section data but also from long-term time series. Actually, the correspondence over time seems to us to raise about as many questions as it answers. Thus the relative constancy of the aggregate ratio of consumption to income which Friedman finds for the period 1897-1949 is difficult to explain, since this ratio is supposed to be a function of the interest rate, the ratio of nonhuman wealth to income, and other variables which fluctuated widely over this period. More important, the permanent income hypothesis does not seem to explain as well as older statistical formulations of the consumption function the relatively high saving in the last six vears.

Turning to the relevant results of the analysis of the 1950 survey data, we have under way a number of different tests of the constancy of the ratio of permanent consumption to permanent income (for different permanent income classes) and of the absence of correlation between transitory components of consumption and income. We can report on only two tests at this time, both directed primarily at the assumed constancy of the consumption-income ratio.

We have found, first, that consumer units with a three-year span of relatively constant income (in the sense that they had about the same income in 1950 as in 1949 and anticipated about the same income in 1951) show the same marked differences in consumption-income ratios of middle and upper income groups as their brethren with more unstable incomes (see Table 1). Since consumer units with relatively constant income are presumably closer to their "permanent" income, this may be interpreted as significant evidence against the hypothesis of constancy in the consumption-income ratio. The data even show some tendency for the consumption-income ratios of the "constant" income families in the upper income groups to be lower than the corresponding ratios of the "nonconstant" income families in these groups the reverse of the results which would be expected from the assumption that the transitory component of income will not be consumed. Only for the lowest income groups, where the consumption-income ratios of the constant income families are substantially lower than those of the nonconstant income families, are the findings reasonably consistent with these theories. It follows that the range of variation in the consumption-income ratios is smaller for the constant income group than for variable incomes. However, the results can hardly be interpreted as supporting the assumption that the rich and poor consume the same proportion of their permanent income.3

It is possible, of course, that these disappointing findings from the viewpoint of the permanent income theories can be explained by marked differences in other socioeconomic characteristics of the constant and nonconstant income families. If this were true, there might still be some question about the utility of the concept of permanent income. Moreover, when the self-employed and not gainfully employed are eliminated to reach a more homogeneous occupational mix or when only families of 3 or 4 persons with a head in the 35-54 age bracket are included to hold size of family and age relatively constant, the results are only moderately improved from the viewpoint of the permanent income theories. Another line of defense for the permanent income theories is to argue that these findings merely suggest that the permanent income span is much longer than three years; this possibility is considered in a later section.

Second, we have found that the current consumption-income ratios of different occupational groups are closely correlated with the average incomes of these groups, even though apart from the entrepreneurial group there is little reason to suppose that the ratio of transient to

<sup>&</sup>lt;sup>3</sup> It may be noted that the slope of consumption on income for all families in 1950 is insignificantly different from that for the three-year constant income families. The figures are .818 and .815 respectively for income groups from \$1,000 to \$10,000, and .690 and .681 for all income groups, based on frequency weighted arithmetic regressions.

TABLE 1 CONSUMPTION-INCOME RATIOS, BY INCOME CLASS FOR ALL CONSTANT AND Nonconstant Income Families, U.S. Urban, 1950

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Income After Taxes	Sample	% Distribution	Average After-Tax	Consumption-Income Ratio		
, income rater raxes	Frequency	of Universe Families*	Income	Including Durables	Excluding Durables†	
Constant-Income Families 1		5.345				
Under \$1,000 \$ 1,000-1,999 \$ 2,000-2,999 \$ 3,000-3,999 \$ 4,000-4,999 \$ 5,000-5,999 \$ 6,000-7,499 \$ 7,500-9,999 \$ 10,000 and over	680 460 282	15.00 18.72 16.42 15.36 12.18 8.08 6.25 4.66 3.33	\$ 640 1,482 2,519 3,477 4,464 5,430 6,693 8,370 17,220	1.531 1.065 1.027 .994 .961 .941 .883 .811	1.462 1.006 .932 .878 .835 .820 .766 .700	
All	3,294	100.00	\$3,685*	.919*	.816*	
Nonconstant-Income Families Under \$1,000 \$1,000-1,999 \$2,000-2,999 \$3,000-3,999 \$4,000-4,999 \$5,000-5,999 \$6,000-7,499 \$7,500-9,999 \$10,000 and over	983	6.66 12.54 16.58 19.40 16.32 9.96 8.28 5.98 4.28	\$ 606 1,552 2,534 3,493 4,461 5,456 6,617 8,459 15,308	2.513 1.212 1.089 1.035 1.005 .969 .924 .857 .687	2.330 1.124 .978 .905 .866 .826 .785 .741 .601	
All	9,195	100.00	\$4,312*	.961*	.838*	
All Families Under \$1,000. \$ 1,000-1,999. \$ 2,000-2,999. \$ 3,000-3,999. \$ 4,000-4,999. \$ 5,000-5,999. \$ 6,000-7,499. \$ 7,500-9,999. \$ 10,000 and over.	771 1,530 2,345 2,985 2,114 1,213 804 430 297	8.93 14.22 16.53 18.30 15.20 9.45 7.73 5.62 4.02	\$ 614 1,532 2,534 3,487 4,462 5,449 6,618 8,434 15,914	2.081 1.154 1.073 1.024 .997 .965 .913 .843 .677	1.922 1.083 .966 .899 .859 .824 .781 .732 .593	
All	12,489	100.00	\$4,147*	:950*	.832*	

<sup>\*</sup> Adjusted for underreporting of high-income units on hasis of distribution prepared by Hyman Kaitz for the Twentieth Century Fund study, America's Needs and Resources: A New Survey (1955), pages 961–964.

† Durables excluded from consumption consist of purchases of automobiles, television sets, radios, musical instruments, furniture, and household equipment.

<sup>‡</sup> Units with same income in previous year (1949) and expecting same income in following ar (1951). year (1951). Source: BLS-Wharton data.

permanent components of income and consumption differs substantially among occupations (Table 2). The coefficient of rank correlation between the current income and the consumption-income ratio for each occupation is 0.81 for all families combined and is not much different for constant and nonconstant income families separately. The only important difference in ranking is found for private household

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TABLE 2 CCNSUMPTION-INCOME RATIOS, BY OCCUPATION, U.S. URBAN, 1950

Occupation	Sample Frequency	Average After-Tax Income	Consumption*-Income
Salaried officials and managers Self-employed Salaried professional and technical Sales Craftsmen Clerical Operatives Other service workers† Laborers Not gainfully employed Private household workers	1,197 960 663 2,254 1,022 2,063 860 807 1,674	\$5,992 5,428 4,941 4,739 4,194 3,682 3,662 3,052 2,968 2,246 1,492	.930 .891 .918 .982 .996 .988 .997 1.010 1.003 1.078 .989
All	12,489	4,147	.950

<sup>\*</sup> Including durables.

† Other than household.

SOURCE: BLS-Wharton data. Population weights were adjusted for undereporting of high income units (see note to Table 1).

workers where a relatively low consumption-income ratio might be explained by the omission from reported income and consumption of a significant amount of income in kind. When this group is excluded the rank correlation becomes 0.94. (Though consumption in Table 2 includes consumer durables, similar results are obtained when consumption is defined to exclude them.) Since for each occupation the average income can be considered to be a good indication of permanent income status, this test also raises some doubt about the constancy of the consumption-income ratio for different permanent income classes.

Consumption Patterns. Our next step is to test the implications of the permanent income hypothesis for consumption patterns. Although the elasticity with respect to (w.r.t.) permanent income of expenditure on a particular category of goods, say food, cannot be computed from ordinary budget data, it can be derived with a little manipulation. This involves merely the division of the food elasticity by the elasticity for total consumption, both elasticities being taken w.r.t. current income. Actually, this division yields the elasticity of food expenditure w.r.t.

total current consumption for families grouped by current income class. That is,

$$\eta_{/y} \div \eta_{cy} = \eta_{/c}$$

where

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 $\eta_{ry} = \text{elasticity of food expenditure w.r.t. current income} \\
\eta_{cy} = \text{elasticity of current consumption w.r.t. current income} \\
\eta_{ro} = \text{elasticity of food expenditure w.r.t. current consumption.}$ 

There are two steps in the rationale enabling us to regard this result (i.e.,  $\eta_{fc}$ ) as an elasticity taken w.r.t. permanent income. The first is that, according to the permanent income hypothesis, the current consumption of groups of families classified by current income approximates their permanent consumption, since the transient components of income and consumption are uncorrelated. That is,  $\eta_{fc} = \eta_{fpc}$  where  $\eta_{fpc}$  is the elasticity of food expenditure w.r.t. permanent consumption. The second is that the elasticity of food expenditure w.r.t. permanent income. This is true since  $\eta_{fpc} = \eta_{fp} \div \eta_{pcp}$ , and  $\eta_{pcp}$ , which is the elasticity of permanent consumption w.r.t. permanent income, is equal to one. The equality of  $\eta_{pcp}$  to one follows from the basic hypothesis that permanent consumption is k times permanent income.

If, then, the permanent income hypothesis is correct, this method of estimating the elasticity w.r.t. permanent income of expenditure on particular categories should yield results similar to those obtained by more direct methods, such as the computation of elasticities for the "three-year-constant-income" families already mentioned. These constant income families may be presumed to be closer to their permanent income status than families with less stable current incomes. Therefore, the three-year elasticities should be closer to the derived elasticities described in the previous paragraph than are the usual type of single-year elasticities (at least for commodities whose expenditures are determined by income over a span of years which is the same as the average span for total consumption).

Furthermore, if we assume that expenditure on a particular category is determined by current income (or by an income span of less than three years) and that the permanent income span is equal to or greater than three years, we may expect also that the three-year elasticities will fall between the single-year and derived elasticities. This is simply another way of saying that the slope of the expenditure-income curve for the three-year—constant-income group will occupy an intermediate position. (Actually, an intermediate slope assures the in-between position of the three-year elasticities for all income levels only when the

log form is used, for then the slopes are the elasticities. In the arithmetic form, a geometric analysis of the behavior of the marginal and average propensities—which, of course, underlie the elasticities—indicates that the specified relationship among the three elasticities can be predicted only for incomes below the average and that no prediction can be made about the relationship for above-average incomes.) Of course, if this is true, the first condition—that the three-year elasticities be closer to the permanent elasticities than are the single-year elasticities—is also met.

These expectations are put to the test in Table 3. The elasticities have been computed from frequency-weighted arithmetic and logarith-

TABLE 3 ELASTICITIES FOR MAJOR CATEGORIES, WITH RESPECT TO CURRENT INCOME, PERMANENT INCOME AND THREE-YEAR-CONSTANT INCOME, THREE AND FOUR PERSON URBAN FAMILIES HEADED BY PERSONS 35-54 YEARS OF AGE, 1950

		ALL URBAN FAMILIES*  Elasticities w.r.t. Current Income						
Line No.	T T 1							
	Income Level	Food 1	Clothing 2	Housing 3	Auto Expense 4	Total Constant 5		
1 2 3	Arithmetic regressions: \$2,000 \$4,000** \$8,000 Logarithmic regressions: All incomes	0.32 0.49 0.66	0.78 0.88 0.94 0.86	0.49 0.66 0.80 0.65	1.50 1.20 1.09	0.60 0.75 0.86		

Line No.	ALL URBAN FAMILES†  E.asticities w.r.t. Permanent Income				FAMILIES WITH CONSTANT INCOMES FOR 3 YEARS‡  Elasticities w.r.t. Current Income			
	1 2 3 4	0.53 0.65 0.77 0.67	1.31 1.18 1.09 1.12	0.82 0.88 0.93 0.86	2.50 1.60 1.27 1.74	0.32 0.49 0.66 0.52	0.82 0.90 0.95 0.90	0.50 0.67 0.80 0.70

‡ The regressions are based on 595 families grouped into 7 income classes except for clothing for which 14 classes were used.

\*\* The \$4,000 income is close to the mean for all families.

Source: BLS-Wharton data.

<sup>\*</sup> The regressions are based on families grouped into seven income classes.
† When these elasticities are estimated by taking the elasticity of each category w.r.t. consumption, the differences in the results obtained are due solely to errors in fitting. For clothing, for example, illentical results are obtained for lines 1 and 4 for elasticities w.r.t. consumption, and estimates of 1.22 and 1.14 for lines 2 and 3, respectively.

mic linear regressions for grouped data for incomes ranging from \$1,000 to \$9,999. The data refer to urban families of 3 or 4 persons headed by individuals in the 35 to 54 age range. Food, clothing, housing, and auto expense have been selected for the experiment because they are the most important categories of consumption in the Wharton-BLS classification, accounting for over 60 per cent of total urban consumption.

How well does the permanent income theory fulfill its expectation that the three-year-constant-income elasticities (columns 10 to 13) will fall between the permanent income elasticities (columns 6 to 9) and the single-year elasticities (columns 1 to 4)? For clothing and housing it passes the test by small margins, for food only if the log form is used, and for auto expense not at all.

If the permanent income theory squeezes past our test, it does not escape without serious question. The elasticities for the three-year-constant-income group are, without exception, much closer to the single-year than to the permanent income elasticities. For food, clothing, and housing it makes virtually no difference—and for auto expense, only slight difference—whether elasticities are computed from the customary type of budget data classifying families by their income standing in a single year or from data in which families are classified according to their "permanent" income status over a three-year period.

There are, from the standpoint of the permanent income theory, two possible lines of explanation for these somewhat unexpected results: one accounting for the closeness of elasticities w.r.t. current income and three-year-constant-income, and the other explaining the divergence of the direct and derived estimates of the elasticities w.r.t. permanent income.

For a given category of expenditure, the simplest explanation for the closeness of the elasticities w.r.t. current income and three-year-constant-income is that the income span relevant to determining expenditure for that category is closer to one year than to three. However, we have found this to be true for categories that account for more than 60 per cent of total consumption. This means that the income spans for the other categories would have to be very long indeed in order to make the income span for total consumption—which can be conceived of as a weighted average of the spans for its components—average substantially more than one year. (This is as good a point as any to call attention to the fact that we have been assuming that three-year-constantincome families have the same elasticities w.r.t. permanent income as persons in general—including those whose income is quite variable. The assumption, it can be argued, is consistent with the permanent income hypothesis.) Of course, if the income spans for total consumption

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and its major components are close to one year, the concept of permanent income adds little to the explanation of consumer behavior and becomes an unnecessary complication.

Perhaps, however, the similarity of the three-year and single-year elasticities and the divergence of the former from the permanent elasticities have the opposite significance—perhaps, that is, income spans are much longer than three years. If this is the case, the permanent income period must be very long indeed, since the three-year elasticities are so much closer to the single-year elasticities than they are to those based on permanent income. If, for example, the food elasticity rises only from 0.51 to 0.52 when the income period is extended from one to three years (see line 4 Table 3), how many years will be required to raise it to 0.67, the level of the permanent elasticity? Even a straight line extrapolation vields an answer of thirty-four years as the income span for food, Moreover, since near years have a larger impact upon consumer behavior than distant years, the difference in the elasticity made by the addition of the first two years will be greater than that made by any subsequent two years, and it follows that it would take much longer than thirty-four years—perhaps longer than the life span of the consumer unit—for the food elasticity to reach the 0.67 level. On the same basis, the income spans for clothing and housing would be much in excess of fourteen and eight years, respectively. Not only do the food and to a lesser degree the clothing spans seem unreasonably long, but their unequal lengths are inconsistent with the basic assumption that the same span applies to all categories. This assumption is a practical necessity in order to derive permanent income elasticities for particular categories. (Since the auto expense elasticities do not conform to the relationships required by the permanent income theory, it is not possible to draw sensible inferences concerning the income span for autos unless perhaps auto expense were regarded as saving. Conflicting evidence on the latter point is presented in the next section.)

The conclusion that may be drawn from this examination of the empirical implications of the permanent income hypothesis for consumption patterns is not that the BLS-Wharton data necessarily invalidate the permanent income theory but rather that they do not indicate the theory adds much to the understanding of demand relationships for particular categories of goods.

<sup>&</sup>lt;sup>4</sup> Margaret Reid and Faith Williams pointed out that the housing data are probably deficient for this test in that rent controls, which were still prevalent in some communities in 1950, may have had distorting influences for renters, while the figures for home owners include only current expenditures (e.g., taxes, interest on mortgages, and repair and maintenance expenditures). Dr. Reid also mentioned that her studies on housing lead her to believe that the income which best explains housing expenditures is that which is relevant to some period longer than one year.

Interrelations of Saving and Consumption. What is the effect of saving on the pattern of consumption? Do high savers allocate their total consumption expenditures among the various categories of commodities and services in different proportions than small savers or than dissavers? Data designed to help answer these questions, which are presented here for the first time, are of great interest for their own sake but also have relevance to the permanent income theories.

The main difference between the high and low savers in any given period, according to the permanent income theories, lies in the fact that the high savers are the recipients of incomes in which the transitory component is high. Their savings are high because consumption remains unchanged despite the transitory rise in income. The unresponsiveness of consumption to evanescent changes in income makes consumption a more reliable indicator of permanent income status than is current income. Finally, since the basic difference between low and high savers at a given consumption (permanent income) level is in the transitory income they receive—which does not affect consumption there is no reason why they should not have similar patterns of consumption. At least, the patterns for low and high savers should be more nearly similar for a given level of consumption (permanent income) than they are for a given level of current income, since the latter includes more widely varying permanent income levels. This suggests an empirical test that can easily be made.

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However, even if consumption patterns for different groups of savers are more nearly similar at a given consumption level than they are at a given level of current income, this does not prove that the families that fall in the high saving categories are there merely because they happen in the period under observation to have been the recipients of incomes with high transitory components. It might simply reflect the fact that the composition of consumption is a function of the level of total consumption rather than of current or permanent income. Thus our test could cast doubt on the permanent income hypothesis but could not provide strong corroboration.

There is, moreover, a further complication. To the extent that the difference between the high savers and the low savers is attributable to socioeconomic characteristics, our test is, of course, irrelevant. In the permanent income theories, however, this element is not regarded as the dominant one in accounting for the differences in savings ratios.

Turning at last to the data for the test, we find that savers are classified into five categories in the Wharton-BLS tabulations. The low savers are those with dissaving equivalent to 25 per cent or more of

<sup>&</sup>lt;sup>5</sup> This assumes, as data used by Friedman indicate, that the transitory component of income is more important than the transitory component of consumption.

income, medium savers are those with positive or negative saving within 5 per cent of income, and high savers are those with saving equivalent to 25 per cent or more of income. The other two classes, medium-low and medium-high savers, fall in the intermediate ranges on either side of the medium savers.

No matter how the saving groups are paired for purposes of comparison, we find that the higher spending of the lower savers tends to be widely distributed over all categories of consumption. There are occasional exceptions but none persists over a wide range of income or for both the low-medium and medium-high comparisons. The most notable exception is the tendency of low savers with low and medium incomes to spend more on auto purchases than medium savers with similar incomes. Generally, however, investment in consumer durables does not appear to account for the greater spending of those who do not save as much as the high savers. Put the other way, the high savers seem to curb their spending all along the line rather than to economize on one type of spending or another.

But comparisons of different saving groups that are based on equivalent levels of current income are not appropriate if the permanent income hypothesis is correct. In this event we should find smaller differences in spending patterns for low, medium, and high savers if total consumption (as proxy for permanent income status) rather than current income is held constant. The matter is put to test in Table 4, which shows the proportions of total consumption allocated to the four most important categories of consumption by families with different savings positions at selected levels of current income and consumption.

The results do not provide any clear-cut confirmation of the superiority of consumption over current income as the major factor governing the allocation of spending to these categories of goods. If the variation of the percentages is measured by the range, the percentages allocated by the five saving groups to food are more nearly alike at given levels of total consumption than they are at given levels of current income. For clothing, however, the opposite is true, and for housing and auto expense the results are mixed. Perhaps the inference that should be drawn is that the level of food expenditures is less and the amount spent on clothing more sensitive to transitory changes in income.

These results in conjunction with those obtained in the preceding section (comparing derived and "direct" elasticities w.r.t. permanent income of expenditure on these same categories) suggest that, if the permanent income theory is regarded as having empirical content, the income span relevant for clothing expenditures is close to one year, the span for food is extremely long, the period for housing is inter-

TABLE 4

Percentage of Total Consumption Devoted to Major Categories of Consumption by Urban Families at Specified Income and Total Consumption Levels, by Saving Position, 1950

***************************************								
1 Current Consump-	2	3 Current	PERCENTAGE OF TOTAL CONSUMPTION DEVOTED TO					
tion (as indicator of per- manent income)	Saving Position*	Income (for groups indicated in cols. 1 and 2)	4 Food	5 Housing	6 Clothing	7 Auto Expense	8 Total Durables	
\$2,000 2,000 2,000 2,000 2,000	Low Medium-low Medium Medium-high High	\$ 613 1,794 2,069 2,344 2,634	29.4% 34.0 38.2 36.2 32.4	17.6% 15.0 14.7 13.6 13.8	6.6% 11.0 10.6 10.3 9.4	8.4% 4.2 3.4 4.8 7.9	9.5% 7.4 4.5 5.2 8.8	
\$4,000 4,000 4,000 4,000	Low Medium-low Medium Medium-high High	2,546 3,472 4,178 4,816 6,427	25.7 29.5 33.0 31.5 30.0	11.4 11.4 11.1 11.5 12.4	8.6 10.9 12.0 12.1 11.8	19.8 13.0 7.8 8.7 9.2	20.3 14.8 9.4 8.1 9.2	
\$8,000 8,000 8,000 8,000	Low Medium-low Medium Medium-high High	5,939 7,551 8,885 10,808 16,123	22.1 25.0 26.9 25.8 23.1	10.1 9:4 9.5 9.6 11.2	11.0 12.6 13.8 14.4 14.1	22.3 18.2 14.1 11.5 11.7	24.6 18.9 13.6 12.3 14.2	
• Current Income		Current Consumption (for groups indicated in cols. 1 and 2)				,	٠.	
\$2,000 2,000 2,000 2,000	Low Medium-low Medium Medium-high High	3,305 2,227 1,936 1,730 1,588	26.8 33.7 38.3 36.8 33.3	12.7 14.4 14.9 14.0 14.7	8.4 11.1 10.4 10.3 9.2	16.5 4.9 3.2 4.2 5.5	17.3 8.4 4.4 4.8 5.6	
\$4,000 4,000 4,000 4,000 4,000	Low Medium-low Medium Medium-high High	5,611 4,457 3,830 3,348 2,791	23.2 28.2 33.3 32.8 33.1	10.5 10.8 11.3 11.8 11.6	9.9 11.1 11.9 11.5 10.7	23.4 14.7 7.6 7.7 8.2	25.4 16.8 9.0 7.0 7.8	
\$8,000 8,000 8,000 8,000	Low Medium-low Medium Medium-high High	10,965 8,442 7,288 6,246 4,665	20.4 25.1 27.7 28.0 29.1	13.2 9.2 9.3 9.6 11.3	13.0 12.7 13.8 13.7 12.7	14.7 17.8 14.2 12.1 9.7	16.8 18.4 13.9 12.3 10.9	

<sup>\*</sup> Ratio of savings, exclusive of personal insurance and consumer durables, to income after taxes. See text for definition of each position.

Source: BLS-Wharton data.

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mediate between one year and the much longer span for consumption as a whole, and the period for auto expense is indeterminate. (The comparison of different saving groups points to an income span for auto expense intermediate between one year and the much longer span for consumption as a whole, while the comparison of derived and direct elasticities suggests a period of less than one year.) The implication that there is a long income span for total consumption largely dependent on an even longer span for food seems questionable.

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# Summary and Conclusions

This paper examines the most recent—and most comprehensive—budget data on consumption patterns as a basis for testing the new permanent income theory of consumer behavior. Our examination both of the theoretical and empirical basis of the permanent income theory results, on the whole, in an unfavorable evaluation of its superiority over alternative explanations of consumer behavior. The pure theory of consumer behavior is at best neutral with respect to the basic assumption that the long-run consumption-income ratio for a consumer unit is invariant to its long-run level of income, and a number of considerations makes the assumption seem rather implausible.

Empirical tests based on cross-section data indicate that the permanent income hypothesis generally provides a slightly better explanation of consumer behavior than a very simple hypothesis based entirely upon current income, but the margin of superiority is small and not consistently maintained. Furthermore, there is no clear evidence that better results would not flow from a more traditional hypothesis based either on taking a longer time span into account (e.g., prior year income) or on using a more comprehensive measure of current resources (i.e., including current assets as well as income).

The theory is not strongly supported by either of two major tests dealing with the assumed constancy of the consumption-income ratio for different income levels. First, the ratio does not, except for very low-income levels, show substantially greater stability (as between income levels) for families with relatively constant incomes—who are presumably closer to their permanent income status—than for families with more variable incomes. Second, the ratio for different occupational groups is closely correlated with their average current incomes, which for each of the groups as a whole may be taken as an indication of its permanent income status.

Our tests of the implications of the permanent income theory for particular categories of consumption indicate that permanent income has little superiority over current income in explaining consumption patterns. This conclusion emerges from comparisons of elasticities for particular categories taken with respect to current income, three-year constant-income, and permanent income and also from tests based on the classification of families by savings position.

Quite apart from the implications for the permanent income theory, several new conclusions emerge from the data. One is that income elasticities based on current-year incomes—the only kind typically available from budget studies—are not substantially changed when the elasticities are computed for families who have constant incomes over a three-year span.

Another is that consumption patterns do not differ much for high, medium, and low savers. This suggests that savings are competitive with consumption as a whole rather than with particular categories.

# GOVERNMENT AND THE CONSUMER INTEREST\*

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This paper is concerned with the institutional problem of the role of federal government regarding the consumer interest. The consumer activities of state and of local governments are very significant, but time precludes their consideration in this paper. The analysis will consist of a brief summary of the historical growth of our government's activities in this area, a résumé of current consumer developments both inside and outside the federal government, and a consideration of the implications that these developments have for economic policy.

### I. Historical Development

On the basis of legislative enactments, it appears that there have been five more or less distinct periods in the evolution of our federal government's peacetime activities regarding consumers.

The first period, lasting from the founding of our country to the Civil War, is characterized by an apparent absence of any consumer protection or assistance. The second period, lasting from the Civil War to World War I, brought the first movements away from laissez faire and cavaet emptor so far as consumers were concerned. During this period considerable legislation was enacted which tended to aid consumers even though much of it was intended primarily to protect businessmen from unfair and deceptive competition. The currently existing prohibition against using mails to defraud was made in 1872, in 1883 the Tea Act was passed forbidding the importation of any tea that failed to meet government standards, and in 1890 the Sherman Act was passed—although it was scarcely enforced prior to 1900.1 After the Spanish-American War the movement accelerated. This included the creation of the Bureau of Standards in 1901, the establishment of what is now the Bureau of Human Nutrition and Home Economics, and the enactment of the Federal Meat Inspection Act in 1906, the Federal Food and Drug Act in 1906, the Net Weight Amendment in 1913, the Federal Trade Commission Act in 1914, and the Clayton Act in 1914. During this time there was only one major reversal: the Sherley Amendment in 1912 which virtually nullified the Federal Food

<sup>\*</sup>Valuable assistance in the preparation of this paper was received from Mrs. Angelica Bilkey, Joel Dirlam, Colston E. Warne and Morris Singer. Professor Warne provided considerable helpful information, especially regarding European consumer developments.

<sup>1</sup> Clair Wilcox, *Public Policies Toward Business* (Irwin, 1955), p. 59. The Sherman Act is significant to the consumer interest insofar as it prevents monopolistic pricing.

and Drug Act of 1906. The third period, lasting from World War I to the Great Depression, was, in a sense, a period of consolidation. Congress enacted some minor legislation adding to the duties of the Food and Drug Administration (the Filled Milk Act of 1923, the Caustic Poison Act of 1927, and the McNary-Mapes Amendment of 1930), and then prevented the effective functioning of the various consumer protecting agencies (including the FDA) by starving their appropriations. On the other hand, none of these agencies was eliminated. During this period the general public apparently grew to accept the advances made prior to World War I. The fourth period, lasting from about 1933 to around 1950; brought many new developments in the government's activities regarding consumers. For the first time in our history large-scale efforts were made to promote the consumer interest as such (much of the earlier legislation made the consumer interest more or less a by-product of business protection). During the early thirties the Department of Agriculture began publishing the Consumers Guide; the NRA, the AAA, and the Bituminous Coal Commission each established consumer advisory boards or councils; the FDIC was established; new legislation was enacted (such as the Securities Act in 1933, the Securities Exchange Act in 1934, the Robinson-Patman Act in 1986—insofar as it promotes healthy competition and thus reduces consumer prices, the Wheeler-Lea Act in 1938, the Wool Products Act in 1940, the Trade Mark Act in 1946, the McCarren Insurance Act in 1948, and the Celler Antimerger Act in 1950); and in addition. the Veterans' Housing Administration and the FHA were established after World War II. During this period a few reverses did occur, although they were very minor compared with the gains: the various consumer counsels or advisory boards which had been created in the early thirties all were disbanded even prior to World War II; in 1937 the Miller-Tydings Act was passed which permitted resale price maintenance in interstate commerce; and after World War II price control was so quickly abolished as to result in a considerable rise of consumer prices.

The fifth period, lasting from around 1950 to the present, seems again to be more or less a time of consolidation—when the public is ascertaining how much of the government's earlier consumer developments to retain. The reverses thus far include: the passage of the McGuire Amendment in 1952 which made nonsigner price clauses legal in interstate commerce—thus facilitating a rapid growth of fair-trade pricing, the near incapacitation of the regulatory agencies concerned with consumer protection by starving their appropriations, and a suspected, but unproved, tendency to reduce the effectiveness of regulatory agencies by a "fifth column" tactic of placing administrators in them who

were not sympathetic with the consumer protecting objectives of those agencies.2 The one positive gain during this period was the Fur Products Labeling Act of 1952. Much more significant, however, was the negative accomplishment of preventing the dissolution of any previously established consumer agencies or the repeal of any consumer protection legislation. The losses during this period now appear to have been pretty much temporary in nature. Thus, during the past few vears the fair-trade pricing threat has been reduced as a result of business competition and of adverse court decisions,3 one consumer agency (the FDA) now is having its appropriation cuts restored, and some of the earlier seeming mishandlings of agency activities are being corrected (e.g., the FDA now publishes their criminal convictions promptly and the BHE is retaining their home equipment testing program). Judging from Congressional behavior, it appears that the general public has come to accept in principle most of the earlier advances in the government's activities regarding the consumer interest.4 In many respects the period of the fifties seems to parallel the period of the twenties.

#### II. The Current Situation

At present our federal government engages in three types of consumer activities: consumer protection—performed by such agencies as the FDA, the FTC, the SEC, the FDIC; consumer assistance activities—performed by the Bureau of Human Nutrition and Home Economics, the FHA, the Social Security Administration, the VA; and information gathering activities—performed by the BLS and occasionally by Congressional committees. No attempt is made to coordinate the work of these agencies. The consumer protecting activity is a regulatory operation and tends not to be popular with the business community. Perhaps this is the reason why the appropriations of the regulatory agencies currently are low and why rather severe restrictions are imposed on their activities. In 1955, e.g., the FDA staff was so small that "the statistics would indicate that among all food establishments any one would be inspected only on an average of once every

<sup>&</sup>lt;sup>2</sup> Consumers Union has charged that certain FTC Commissioners have made what seem to be some excessively mild stipulations (see Consumer Reports, June, 1951, pp. 268-270) and that the FTC's Trade Practices Conferences and Robinson-Patman enforcement policies in recent years seem, if anything, to promote rather than to restrict price maintenance policies (see "The Government Regulatory Agencies," August, 1955, unpublished material prepared by Consumers Union for a meeting with the Council of Economic Advisers). It also has been observed that the publication of some of the FDA notices of convictions have been so delayed that their publicity value was effectively lost (this problem seems not to have occurred during the tenure of the present FDA Commissioner). Within the past year, attempts were made in the BHE to scuttle their entire home equipment testing program, in spite of strong objections from the American Home Economics Association.

<sup>&</sup>lt;sup>2</sup> See L. J. Gordon, *Economics for Consumers* (American Book Co., 1953), pp. 272-282. <sup>4</sup> E.g., in 1952 a court reversal denied the FDA authority to inspect plants without the owner's permission. Congress then essentially restored this right in 1953.

60 years." Similarly, the SEC's "... budget has been slashed and its staff cut (from 1,700 in 1941) to about 700: 'less than the number of employees in a single large brokerage office." Also, the FTC employs fewer people than in 1918.7 "Thus the Commission [FTC] resembles a city which, while doubling in population and tripling its volume of trade, has slightly reduced the size of its police force and fire department. Maintenance of effective operations has become steadily more difficult. The problem is aggravated by the fact that the Commission's statutory duties are substantially greater than when it was created."8 (The FDIC, being an insurance type of operation, is not dependent upon Congressional appropriations and seems not to be severely restricted financially at the present time.) In addition to having their appropriations reduced, these regulatory agencies also are restricted as to the extent of their activities. This may be illustrated by the situation confronting the FDA, which probably is our most important consumer protecting agency. As the law now stands, foods and cosmetics may be sold without prior FDA certification of safety. The burden of proof that foods or cosmetics are harmful rests upon the FDA, not upon the manufacturer, and manufacturers may appeal FDA decisions to the courts. Thus the coal tar dye FD&C Red No. 32, which is used to color oranges, was removed in 1955 from the FDA's list of approved coloring matter for foods because of its proven toxicity. The orange growers associations of Florida and Texas then appealed the case, and the FDA did not fight for their stand because they had no proof that consumers eat enough orange peels (in homemade marmalade, candies, etc.) to do them harm.9 It should be noted that FDA tests for toxicity and carcinogenicity are made only on an item-by-item basis. Potentially harmful substances may be added to any given food, provided that the amount of such substance in the item in question is too small to produce evident injury to consumers. Unfortunately (due to the technical problems involved and appropriation shortages), no practical cognizance is taken of the possibility that consumers unwittingly may ingest harmful substances from a number of different foods and thus receive such a total aggregate of toxic and carcinogenic substances in their diet as to constitute a serious health hazard.10

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<sup>&</sup>lt;sup>6</sup>U.S. Government, House Document No. 227, "Citizens Advisory Committee on the Food and Erug Administration," June, 1955, p. 34.

<sup>6</sup> Clair Wilcox, op. cit., pp. 296-297. The quotation refers to the SEC situation in 1954.

However, their appropriations since have been reduced even further.

J. N. Morgan, Consumer Economics (Prentice-Hall, 1955), p. 336. This statement refers to the FTC situation as of June 30, 1952. However, their appropriations are even smaller now than in 1952.

<sup>8</sup> Ibid.

<sup>&</sup>lt;sup>10</sup>See St. Louis Consumer Federation, Special Bulletin, May, 1956, p. 2.

<sup>10</sup>See U.S. Government, Hearings Before the House Select Committee to Investigate the Use of Chemicals in Food Products (82nd Congress, 1951), Part 1, p. 331. Also see Sir Edward Mellonby's article in the British Medical Journal, October 13, 1951.

The FDA is empowered to establish standards of identity for food products—which standard then prohibits specified harmful additives from being used in the product in question unless its presence is acknowledged on the label. Where it can be proved that an additive has injured a consumer, its use can be prohibited unconditionally. Unfortunately, the establishment of standards of identity is a slow and expensive process. For example, "in 1952, after ten years of preliminary research and hearings that included 3,000 exhibits and covered 17,000 pages of testimony, the FDA established standards of identity for five brands of bread." Standards of identity have not yet been established for many food items—biscuit mixes, for example, As the matter now stands, it is perfectly legal for biscuit mixes to contain chemicals which are prohibited from being in five varieties of bread because of their proven toxicity.12

Furthermore, a number of items legally fall outside the scope of the FDA or any other federal agency. Mandatory inspection is not required for poultry or of poultry processing plants; yet there are over twentyfive diseases of poultry to which man is also susceptible.<sup>13</sup> Also exempt are soaps, cigarettes,14 the fluoroscopic fitting of shoes, etc. Cosmetics need not show ingredients on their labels.

It should be noted that this year Congress has alleviated the FDA's past plight somewhat. Their 1956 appropriation is 36 per cent above that for 1955 as of the time the Citizens Advisory Committee on the Food and Drug Administration rendered their report. Nevertheless. this still is far short of the 300-400 per cent increases recommended by that Committee.15

Less hostility is addressed to the consumer assisting agencies than to the consumer protecting agencies. There have not been many complaints regarding the appropriations for the Bureau of Human Nutrition and Home Economics or of the Social Security Administration. The FHA and the VA have fared less well, however. A suspicion (not documented) has been raised that certain effort is being exerted to convert the Bureau of Human Nutrition and Home Economics partly into some sort of a propaganda agency to help dispose of farm surpluses.

The government's consumer information gathering activities have not been dealt with consistently. Congress has spared no expenses on

<sup>&</sup>lt;sup>11</sup> Clair Wilcox, op. cit., p. 277. <sup>12</sup> Statement by George P. Larrick, FDA Commissioner, made at a meeting with the Council of Economic Advisers, May 14, 1956. <sup>13</sup> See Exhibit B of Representative Mrs. L. Sullivan's remarks before the House of Rep-

resentatives, June 18, 1956.

<sup>14</sup> Menthol, which is used in one of the brands of cigarettes, is suspected of preventing blood from clotting. See *Consumer Reports*, September, 1951, pp. 427-428.

15 U.S. Government, House Document No. 227, op. cit., p. 5.

its own investigations, but the BLS appropriations are too small to enable that agency to obtain much helpful data regarding consumption. It makes virtually no attempt to inform families about current governmental developments of interest to consumers.

# III. New Developments

From the above historical summaries we now turn to the question of what future trends are likely to occur in our federal government's activities regarding the consumer interest. The author's technique for ascertaining this is: to review the latest consumer developments in the U.S.A., on the assumption that activities at the grass-roots level reflect the trend of voter interests to which our elected representatives must cater, and to review the latest government developments relating to the consumer interest, on the assumption that this exposes the current Congressional and Administration inclinations on such matters. The author believes that the combination of these two sets of developments then indicates the probable trend of future governmental activities regarding the consumer interest. These developments are summarized below.

- 1. There has been a large increase in subscriptions to the publications of consumer testing organizations; e.g., Consumers Union has more than doubled its circulation since 1949.
- 2. There has been a considerable increase of interest in consumer courses which teach people how to manage their finances and which contain factual information that assists students to adapt better to our economy. This includes topics such as insurance, banking, investing, techniques for increasing savings, etc. This has been manifested by a growth of consumer education in secondary schools, 16 in universities, 17 and at the adult level.18
- 3. There appears to have been some growth, albeit very slight, in consumer organizations. 19 The National Association of Consumers, e.g., was initiated in 1947 to unite grass-roots consumers in a nationwide

Minnesota Press), p. 94.

The See Wilmoth C. Price, "The Status of Consumer Education Courses in Colleges and Universities" (unpublished doctors thesis, University of Minnesota, 1953).

The many workshops in Family Financial Security for teachers, sponsored both locally and by the Institute of Insurance, have been heavily attended. Requests for similar programs now are coming to the Institute of Insurance from Canada and Puerto Rico, Farm groups are beginning to request that the Agricultural Extension Service provide them with guidance in family financial management; accordingly the Extension Agents in Connecticut began in 1956 to take special training to enable them to provide such service. Similar such grass-roots requests have been made on the Extension Service of the University of Manitoba.

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10 According to Colston Warne, grass-roots consumer organizations in the U.S.A. grew considerably during the later forties and then declined somewhat during the fifties.

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<sup>&</sup>lt;sup>10</sup> See R. G. Price, "A Continuing Program of Consumer Education," in *Proceedings, Institute on Consumer Problems*, July, 1955 (pamphlet published by the University of Minnesota Press), p. 94.

organization: "Most of the local groups are active in promoting quality standards and in informing people about the standards." The Consumer Conference of Greater Cincinnati reports, e.g., "that a committee of housewives meets regularly with a committee of merchants for the purpose of improving information about products sold in their stores. As a result, advertising and selling in Cincinnati are more informative." (*Ibid.*)

- 4. There has been a little advance in the consumer co-operative movement although not in the traditional areas of retailing.<sup>21</sup> There has been a considerable growth of credit unions, some increase in co-operative insurance, and in a few localities (particularly New York City) some co-operative housing units have been started. However, there is no indication that the consumer co-operative movement has increased its relative position in the economy as a whole.
- 5. There have been two notable developments in the federal government. First, the Council of Economic Advisers has held several meetings with consumer specialists to obtain their views about the federal government's activities regarding consumers. After the Council's May, 1956, meeting with consumer specialists, a federal agency distributed a memorandum discussing the question of what their reaction should be to the Council of Economic Advisers on the proposals of using consumer acvisory groups in federal agencies and of the establishment of some central consumer information office. The second development at the national level has been the investigation during the past few months by a Subcommittee of the House Interstate and Foreign Commerce Committee of the relationship between automobile power and traffic safety. These congressmen were suspicious (as were many of their constituents) that the competitive horsepower race between auto manufacturers has not been in the public interest.22 In the author's opinion the real significance of this investigation is its disclosure of a Congressional belief that the competitive process by itself does not necessarily promote the consumer interest. Such a belief, if widely held, would seem to be conducive to increasing attempts on the part of the federal government to promote the consumer interest.
- 6. Along with the above summary of recent developments in the consumer area, it seems significant to observe what is not taking place. Thus far, at least: there is no evidence of a development of consumer pressure groups in any countervailing power sense; there is no evidence of any consumer desire to eliminate any of the currently existing gov-

<sup>&</sup>lt;sup>20</sup> A. W. Troelstrup, Consumer Problems (McGraw-Hill, 1952), p. 372.

<sup>&</sup>lt;sup>21</sup> The co-operative grocery movement does seem to be fairly strong in a few localities; e.g., Palo Alto, Berkeley, Fitchburg (Mass.), etc.

<sup>22</sup> See Business Week, September 1, 1956, pp. 28-29.

ernmental or private aids or protections; nor is there any evidence of growing tendency on the part of American families to shift emphasis from their role as producers to their role as consumers. It might be argued that since husbands tend to specialize in production and wives tend to specialize in consumption, any increasing participation of women in government probably will lead to increasing governmental measures for promoting the consumer interest. Although this proposition may be true, it does not imply that families as units are shifting emphasis from producer to consumer roles (the growing incidence of wives working actually may lead to an opposite movement).

In summary, there are several bits of evidence to suggest that in the reasonably near future (barring war) the federal government will give somewhat greater attention to the consumer interest than has occurred since 1950. They are: the willingness of Congress to increase appropriations for the Food and Drug Administration in 1955 and 1956 after they became convinced that that agency's situation really was critical, the willingness this year of the House Interstate and Foreign Commerce Committee to investigate whether the auto industry's horse-power race was in the consumer interest, and the concern of the Council of Economic Advisers about the consumer interest.

Thus far there is no evidence to suggest the likelihood of any really new departures in the federal government's activities regarding consumers. Slightly more attention might be given to consumer informational service than formerly, but the author anticipates that whatever further governmental activity occurs in the consumer interest will take place primarily within the framework of existing agencies by means of slight appropriation increases.

Let us now examine briefly some of the activities that governments outside the continental U.S.A. are undertaking with respect to the consumer interest. This should help to place our own developments in somewhat clearer perspective.

Puerto Rico. Within the past year, the Commonwealth of Puerto Rico has established an ambitious and well-co-ordinated consumer education program under the guidance of an American, Mrs. Charlotte L. Hanson. The purpose of this program is to assist the consumers of Puerto Rico to "make the best use of their financial and other resources [in order] to obtain the highest standard of living possible."

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<sup>&</sup>lt;sup>28</sup> Unpublished memorandum from Mrs. Hanson to the Advisory Committee, for the Programa de Orientacion al Consumidor, dated February 17, 1956. More specifically, the objectives stated are: (1) "To increase consumer competence in budgeting, in buying and using goods and services in regard to price, serviceability, and durability for the purpose for which they are bought; and to stimulate consumer purchase and use of locally produced and manufactured products." (2) "To make optimum use of governmental programs and services to the consumer." (3) "To stimulate consumer groups to organize." (4) "To

Costa Rica. The government of Costa Rica is becoming interested in consumer matters as they relate to their program of economic development. Top personnel in the Costa Rican Directorate of Industry are being given special training in consumer analysis for the purpose of better ascertaining domestic needs and of learning how to encourage their people to shift consumption from foreign items to domestically produced items.24

Norway. A Consumers' Council was established in Norway in 1953; somewhat as a governmentally financed federation of existing consumer organizations. This Council (whose seven representatives are nominated by the government but suggested by the major housewives' and consumers' organizations) functions as a liaison between the government and these organizations, keeping the government informed of the consumer viewpoint and informing families about consumer developments occurring both inside and outside the government.<sup>25</sup> In addition, the Norwegian Government has a Minister of Consumption (a position somewhat analogous to a cabinet position in this country) who works with this Council.

Sweden. A few years ago the HFI was formed in Sweden for the purpose of testing and reporting on consumer items. Originally it was established as a tripartite organization operated jointly by consumer groups, the government, and industry. Currently it is in the process of reorganization as a purely governmental undertaking.

The Netherlands. The Netherlands has developed an interesting "mixed" organization known as the Household Council of the Netherlands. It is an autonomous organization composed of representatives from various governmental agencies (e.g., the Extension Service for Rural Home Economics), from professional organizations (e.g., the

develop channels of communication between consumers and the Government agencies develop channels of communication between consumers and the Government agencies with consumer education programs in order to have a better understanding of consumer problems, and to help make the consumer aware of his problems, what is being done and what can be done about them." (5) "To get a Consumer Testing Laboratory established in Puerto Rico," and (6) "to work with business for the establishment of a Better Business Bureau and to realize the objectives of the program."

2° Sr. Alberto Golcher, Chief of the Technical Section, Office of the Director of Industry, concluded his training program under the sponsorship of the International Co-operation Administration in late 1956. Other Costa Rica administrators have to receive similar

Administration in late 1956. Other Costa Rica administrators hope to receive similar training.

training.

<sup>23</sup> According to unpublished information supplied by Professor C. E. Warne, the Council's main tasks are: "(1) to provide the authorities, and others if possible, with statements or expositions concerning measures for the protection and promotion of consumers' interests; (2) to insure that consumers' interests are represented on committees and boards of importance to the ordinary consumers; (3) to work for the promotion of research, standardization, and the marking as to quality of goods particularly important to consumers; (4) to carry on information work within the framework of the Council's tasks, and to contribute to the co-ordination of the work of keeping consumers informed; (5) to co-operate with corresponding consumers' organizations in other countries." According to Professor Warne, objectives "(3)" and "(4)" are considered the most important.

Netherlands Union of Boards and Teachers of Home Economics Schools), from industry (e.g., the Household Information Service of the Association of Gas Manufacturers), and from fifteen federations of women's organizations. It is supported by government grants, membership fees, and from receipts coming from the sale of its own publications. This Council provides advice to families regarding home management, financial management, etc.; it sponsors research regarding consumer and homemaking problems; it is represented on various governmental and international committees (e.g., the Advisory Committee of the European Coal and Steel Community); and it participates in governmental hearings. It also works with scientific institutions and with trade and industry.

West Germany. The German situation still is influenced by laws carrying over from Hitler's National Socialist regime. For this reason much of the current consumer effort in Germany is directed against existing governmental regulations. Very stringent libel laws have prevented the development thus far of consumer testing activities. The German government recently appointed a commission to look into the legality and feasibility of product testing undertakings.

#### IV. Normative Standards

The various developments outlined above are suggestive of consumer programs which might be considered, but what programs our federal government ought to undertake can be answered only in terms of whatever normative standards are employed. Normative standards for evaluating our public economic policy derive ultimately from whatever concept the analyst holds regarding the true nature of our economy. The conclusions to which the major existing concepts lead might be outlined as follows. Classical theory in its traditional form leads to the conclusion that the government could best promote the consumer interest by preventing unfair and deceptive competition, by improving consumer knowledge and information, and by keeping government interference in general to a minimum. Neoclassical theory leads to the same conclusions as classical theory plus the proposition that the government should prevent any monopolistic activity within the economy. Marxist theory leads to the conclusion that the government could best promote the consumer interest by socializing industry and perhaps commerce as well. Aggregate theory leads to the conclusion that the government can best promote the consumer interest by maintaining full employment and maximizing real income. Countervailing power theory leads to the conclusion that this can be accomplished best by the government encouraging the development of large consumer organizations to countervail the power of the other elements in our economy.

Solidarist theory<sup>26</sup> seems to be much more suggestive than the other theories as to what the federal government's relationship to the consumer interest should be, and, as will be indicated later, its basic precepts are in close harmony with views that seem to be held by the consuming public. At the same time, it has not been widely discussed in this country. For these reasons, more attention will be given to its implications than was devoted to the other theories. Solidarist theory leads to the conclusion that the federal government could best promote the consumer interest as follows.27 (1) Protect the health of the citizenry. Under present circumstances this seemingly would involve providing the FDA with larger appropriations than at present—perhaps with the amount suggested by the Citizens Advisory Committee on the Food and Drug Administration. It would seem also to involve a reconsideration of the Delaney Amendment<sup>28</sup> which would prohibit additives from being placed in foods until they have been proven safe for human consumption—as has been required of new drugs since 1938. (2) Promote common understanding between buyers and sellers. Under present circumstances this would seem to include: giving adequate appropriations to the FTC to enable them to maintain a sharper vigilance over false and misleading advertising and labeling, encouraging industry to establish informative labeling codes, encouraging industry to make its advertising informative,29 making information compiled by the U.S. Bureau of Standards available to the public, and encouraging the further development of private consumer testing organizations. (3) Promote that degree of equality of income distribution which appears most consistent with the common good. This probably would involve an attempt to compute the balance required between consumption and investment to maintain continuous full em-

The first three of the activities listed derive from the common good principle, see Cronin, op. cit., p. 534. The fourth, fifth and sixth activities derive from the subsidiarity principle; see Cronin, op. cit., p. 156.

principle; see Cronin, op. ctt., p. 156.

28 This Amendment was sponsored by Representative James J. Delaney of New York in 1953 after exhaustive hearings (see "Hearings Before the House Select Committee to Investigate the Use of Chemicals in Food Products," 1951). It failed to pass.

28 One possibility would be to tax all advertising by 10 per cent of its cost if in the opinion of a Board it is not 75 per cent (in space or in time) informative in nature. For those firms that still prefer to use noninformative advertising, their tax proceeds could be accordingly to the Proceeds of Standards on the programment tensing organizations. turned over to the Bureau of Standards, or to nongovernment consumer testing organizations, so as to enable them to make objective information available to consumers.

<sup>&</sup>lt;sup>20</sup> See R. E. Mulcahy, The Economics of Heinrich Pesch (Holt, 1952), Chaps. 2, 3, and p. 65. Solidarist theory is derived from the organic concept of society developed by Spencer, Hobhouse, Cooley, etc. Both Protestant and Catholic writers find it especially compatible with Christian teachings; hence they have been the most instrumental in applying it to economic issues. The Catholic analysis is quite clearly spelled out (see Rev. J. F. Cronin, Catholic Social Principles, Milwaukee: Bruce, 1950, Chaps. 3 and 7). The Protestant analysis seems not to be spelled out, but it is implicit in M. W. Childs and D. Cater, Ethics in a Business Society (Harpers, 1954), Chaps. 7 and 3. For a non-religiously oriented book having solidarist theory implicit in the analysis, see J. M. Clark, Alternative to Serfdom (Knopf, 1948), especially pp. 121-153. The analysis presented above follows primarily from that given in Cronin and Mulcahy.

<sup>27</sup> The first three of the activities listed derive from the common good principle, see

ployment, plus a developing culture—both technological and nontechnological. (4) Encourage families to join consumer organizations. (Solidarist theory does not conceive of consumers as being some separate group in society; rather, it conceives of consumption as being but one of the roles performed by all of the people.) To the extent that such an attempt were successfully accomplished, consumer views could be more effectively presented, consumer education programs could be better developed. Congress would tend to be made more cognizant of the consumers' interest, and pressure would be brought by consumers themselves against firms who follow monopolistic pricing policies. (5) Encourage state and local governmental units to undertake more consumer activities themselves rather than to have them depend as much on the federal government for this as some now do.<sup>30</sup> (6) Encourage the development of small business wherever there is reason for believing that smaller firms can promote the common good as well as larger firms. The main purpose for doing this is to maximize freedom. In addition, however, it could be conducive to the maintenance of reasonably competitive consumer prices. (7) Actively strive for the spiritual and cultural development of our citizenry. Solidarist theory places heavy emphasis on this matter. For the U.S.A., that perhaps would involve federal subsidies to the arts and to education (including adult education), plus efforts to provide all families with a real income sufficient for their necessities and for the development of their spiritual and cultural life. 31 The latter endeavor perhaps could best be accomplished by extensive training and assistance programs for very low income families and by a raising of social security benefits by at least enough to compensate for price increases.

To summarize briefly, solidarist theory seems to lead to the conclusion that the federal government should expand nearly all of its currently existing consumer programs and that in addition it should: actively encourage state and local governments to develop their own projects in the consumer interest, work for the formation and growth of grass-roots consumer organizations, promote the cultural and spiritual development of our citizenry, and greatly increase efforts to improve the economic well-being of our lowest income families—even if such programs tend to inhibit the maximizing of our total national income.

While the analyst is free to select whichever theory he wishes as a basis for his normative standards, he must remember that his evalua-

State and local governments differ greatly in the extent of their consumer programs. See L. J. Gordon, *Economics for Consumers* (American Book Co., 1953), pp. 593-598.

Tolidarist theory regards economic development as being but an aspect of human progress: hence wealth is considered good only insofar as it satisfies physical needs and promotes the spiritual and cultural growth of the people. The maximization of wealth (or real income) is not regarded as being necessarily good; e.g., if it is accomplished by long hours of work or by having mothers work.

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tions will be accepted for practical policy making in this country only if they are based on concepts that are widely accepted by our citizenry and their representatives. Pending the availability of more reliable evidence, we only can infer the public's concepts regarding our economy from their behavior and from the behavior over time of their elected representatives. From the material discussed in this paper, it appears that neither consumers nor the public as a whole think of our economy in terms of any classical laissez faire model. They seem to have accepted too much governmental regulation for that. Neither is there any evidence that consumers conceive of there being any essential conflict between themselves and any other element in society, such as the Marxian theory or the theory of countervailing powers might imply. Consumers have made no apparent effort to conduct themselves as pressure groups or as bargaining groups. There is no evidence of a general desire for more government ownership of productive facilities (except possibly as regards public utilities in the Pacific Northwest)—such as socialist theory might imply. Instead, all available evidence suggests that consumers as a whole have accepted a view of there being essential harmony and community of interest between themselves and all other elements in our economy—even though many frictions may occur: that some sort of reasonable competition should be encouraged without being carried to the point where it becomes destructive; that sufficient controls should be instigated to protect them from unscrupulous merchants and producers without those controls being carried to the point where they hinder well-intended private initiative; and that consumers themselves should strive to become better informed about the comparative virtues of competing products. If the author is correct in his belief that the above summarizes the view implicitly held by the mass of American consumers, then of the various concepts thus far developed this view seems closest to approximate the solidarist theory. Neoclassical theory also is based on a number of the precepts which the author believes to be widely held by consumers, and the conclusions to which solidarist theory leads seem on the whole to be compatible with neoclassical theory.

In conclusion, the author is of the opinion that much more attention needs to be given to the problem of establishing normative standards for government policy regarding the consumer interest than has been possible in this paper. Perhaps neoclassical theory can be more fully developed than heretofore for this purpose? Perhaps welfare theory has more implications than are currently suspected? Certainly, solidarist theory seems to offer a considerable potential for further analysis.

#### DISCUSSION

Persia Campbell: This section meeting in the AEA program is an indication of the recent rediscovery of the consumer. In traditional theory, the consumer was the ultimate regulator of a competitive economy and therefore a central figure. Then he got lost sight of in the concentration on production. He was rediscovered, as a statistic, by Keynes and his followers, who recognized that the products flowing off the assembly line must find their way into consumer hands, but they seem to have had confidence in the predictability of the "propensity to consume" as a statistical response.

More recently the consumer has turned into a human being, and his behavior is causing some concern. The December 17 issue of *Newsweek*, for instance, gives him headlines as the "key man in '57" and seems to have some question as to whether the "major shifts" said to be taking place in "consumer behavior, consumer desires and consumer spending" are in fact "predictable." This is, of course, a very serious matter for the economy. Consider the one fact that in the third quarter of 1955, saving as a percentage of total disposable income is reported as 5.8 per cent and in the third quarter of 1956 as 7.4 per cent. With total disposable income reaching up to the 300 billion dollar mark, uncertainty as to the saving or spending of 1.6 per cent of it could give automobile and appliance manufacturers the jitters.

In their interesting paper, Drs. Kravis and Friend, seeking more understanding of some of these behavior problems, have examined certain factors that seem to have affected historic patterns of expenditure. But since, by mischance, I did not receive a copy of this paper before coming to this meeting, I shall confine what is left of my allotted time to Dr. Bilkey's remarks.

I looked through the Bilkey statement carefully, trying to find a central theme, or focus of interest, as a peg on which to hang some comments. I think it is to be found in the question: What is the proper role of government in the consumer interest? Dr. Bilkey, of course, used more professional language, such as normative standards and the like. In a way his language trips up his argument. I find a certain confusion in the progress of his argument due in part to the fact that he does not define clearly what he means by consumer or indicate the nature of the consumer interest.

Consumer is commonly used in either one of two meanings. One relates to the consumer-buyer at the market—using market in a broad sense to include any place or process at which or through which money is exchanged for goods and services for final consumption. In this sense, the consumer has the important role of maximizing the value of the family's market dollar. This is the meaning of consumer as used by Drs. Kravis and Friend when they discuss expenditure patterns and talk of the propensity to consume (which for clarity should be propensity to spend).

The second, more inclusive meaning of consumer is as the final user rather than merely the buyer of economic goods and services. These may come from

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sources other than the market, as, for instance, government services and home production. In so-called "undeveloped" countries, where the market is insignificant, this is the only meaning that makes much sense. When we have our attention on the consumer as the final user of economic resources, we find ourselves thinking in terms of the level of consumption, of minimum standards of living, and so on.

Now, when we talk of the proper role of government in the consumer interest, are we concerned primarily with government action protecting and promoting the interest of the consumer buver, getting maximum value for the dollar in hand? Traditional economic theory assumes an informed. responsible consumer buyer, selecting on a price-quality basis in a competitive market. We have recognized for a long time that the market is not inherently competitive and have approved government action aimed at correcting this situation. What has been done to overcome the difficulty arising from the fact that the consumer, generally speaking, is neither well informed nor notably responsible in market behavior, particularly with respect to the increasingly complex synthetic, mechanical, and electronic goods coming off today's production lines? To some extent, as Dr. Bilkey has pointed out, government has tried to correct certain abuses through the Food and Drug Administration and other agencies—and here I should like to take some exception to the suggestion that this has been a federal rather than a state function. There is, as a matter of fact, a considerable body of state regulatory law in this field, as I discovered in preparing the recent booklet, How Much Legal Protection Does New York State Give the Consumer?

A slight gesture has also been made toward helping the consumer-buyer become better informed—but certainly not as an adequate corrective to illinformed and irresponsible behavior in a market that is not conspicuously competitive.

In considering measures aimed at increasing the value of the market dollar through action relating to price, quality, quantity, or conditions of promotion and sale of consumer goods and services and consumer competence, we are led on to more general questions such as the effect of government policy on the value of money itself. This brings us to the second interpretation of consumer; the broader meaning as final user of goods and services, whatever their source. The dimensions of our discussion now take on entirely different proportions. What is the proper role of government in redistributing income? In subsidizing middle-income housing? Is the consumer interest, in the short or long run, better served by a steady upward inflation associated with economic growth? Here we are dealing with welfare economics.

The importance of consumer representation in government as a means of keeping governmental policy on the right track from a consumer point of view, is getting more recognition in political circles but not the professional consideration by economists it calls for. We must be careful about assuming, as Dr. Bilkey seems to do, that developments in other countries are a guide to action here or vice versa, since different circumstances may call for different approaches. This was impressed upon me during my recent visit to Puerto Rico to talk over some of these matters with the Consumer Ad-

visory Committee set up by the Puerto Rican Government. I should like also to point out, in passing, that an interesting experiment in consumer representation in the nationalized industries of Great Eritain has been going on for nearly a decade.

The whole trend towards representation of economic groups in government should be examined. What is its significance in a democratic-capitalistic society? Some people have referred to it as "economic fascism." How would we know if the consumer interest were adequately represented in government?

I agree with Dr. Bilkey that more attention should be given by economists to an analysis of current political issues to determine how they affect the consumer interest. One of my greatest problems as Consumer Counsel to the Governor. State of New York, is to get adequate data about such issues in the first place, and then an analysis and evaluation of whatever data can be assembled from a consumer point of view. For instance, we recently had a state conference on store trading stamps. It caused a great deal of excitement and was widely reported in the press. This has become a highly emotional issue throughout the country and last year a majority of states had to deal with legislative proposals relating to it, but there has been very little analysis of its significance by economists, as a guide to political action. We cannot attempt to answer the question of what is the proper role of government in the consumer interest until we give more thought to the nature of the consumer interest itself and the conditions necessary to promote it, and this applies whether we are thinking in the narrower sense of consumer-buyer at the market or take the broader meaning of consumer as the general public in its final use of economic resources.

ALFRED R. OXENFELDT: In their very excellent and ingenious paper, Friend and Kravis marshall a considerable body of evidence around two central questions related to the consumption function: first, are savings based upon a planning period of one year or less or of well over a year? Put differently, does our ability to explain the past or to forecast consumer spending improve if it is taken to be a function of income received during several years rather than only one? If one accepts the permanent income hypothesis, he may feel obliged to modify his explanation of the business cycle. Explanations for cumulative upswings and downswings revolve to a substantial degree around the assumption that consumer spending responds directly, immediately and more or less proportionately to variations in current income receipts. Second, at any given time, do consumers with substantially different amounts of disposable income spend essentially similar proportions of the income they regard as "permanent"? Professor Friedman believes the answers to both questions to be affirmative. Friend-Kravis' findings suggest negative answers. Although these questions are related, they are quite separate. It is altogether possible that most families make their expenditures on the basis of a planning period far longer than one year and yet the marginal propensity to consume diminishes as income rises.

Do Friend-Kravis' data constitute a reliable test of the so-called "permanent income" hypothesis? The following are some questions which imply

that they do not. I am sure that Friend-Kravis have asked themselves most of the following questions, but some others may overlook them.

Our main questions relate to the so-called "constant-income group." Note that Friend-Kravis only claim that these families are closer to their permanent income than the variable-income recipients. We must nevertheless ask whether they are sufficiently different from the others for the differences to show up clearly in the kind of comparisons that Friend-Kravis make. In particular, we would want to know whether their income was in fact constant in 1949 and 1950 and that they were quite confident that their income in 1951 would be the same as it had been in the two preceding years. More important, we want to know whether the constant-income families regarded their income during the years 1949 and 1950 as their permanent or typical income. It is not unlikely—though the full report of the BLS study may show this not to be the case—that the respondents interpreted the question about similarity of income in 1949 and 1951 to cover broad limits—possibly exceeding a full class interval. Also, one would suppose that many people would state that they expected the same income in 1951 as they received in 1949 and 1950 simply because they had no special reason for expecting higher or lower incomes than they were then receiving—though they may have considered their next year's income highly uncertain. For their purpose, Friend-Kravis required a measure of the most likely value of income and the confidence that respondents' placed in their guesses.

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Of course, the most troublesome point is the linking of stable income, however gotten at, with Professor Friedman's concept of permanent income. One wonders how many families are realistic about their income prospects and whether realism on this score is not itself highly correlated (probably inversely) with the level of income. I do not know how Professor Friedman would define permanent income in operational terms; possibly he would do so in terms of what people said they expected their income to average over the next few years. One can, however, feel fairly certain that he would not consider the Friend-Kravis stable-income group to be composed of persons who had attained their permanent income and were aware of that fact.

Then, too, one would have chosen different years than 1949-51 to test the hypothesis if he had a choice. These years were quite disturbed and particularly so the year 1950, to which most of the computations apply. The Korean war created shortage scares, some violent price increases, and the fear of more and greater price spurts. However moderate, there was a recession in 1949. In view of these conditions, it is surprising to find that over one-fourth of the population (using the BLS sample representation) had stable incomes in 1949-50 and expected the same income in 1951. The unusual income and anticipation position of these families raises some doubt about their representativeness as spenders and savers.

The years to which the data apply are most unfortunate when one measures actual expenditure. Friend-Kravis' general conclusions depend heavily upon the representativeness of the consumption expenditures of the stable income group. Much of their argument would fall if, as might well be the case, the expenditures of all groups—both constant- and variable-income recipients—

reacted in essentially the same ways to the price, availability, family disruption, geographic movement, psychological impact, etc., effects of the Korean emergency.

It is difficult to evaluate the combined weight of these points. They may represent minor quibbles. On the other hand, in the absence of more data than have been offered by Friend-Kravis, they could also account for all of the inconsistency between Friend-Kravis' data and Professor Friedman's theorizing.

Even if one concludes that Friend-Kravis have not tested the permanent income theory conclusively, he should recognize the very real contributions they make. In particular, they have devised methods of testing this hypothesis that will greatly simplify the work of future investigators who undertake tests of it.

In the few minutes that remain, I would like to make a few observations on the questions with which this meeting is concerned.

- 1. I would warn against any theory of savings that claimed a high degree of uniformity in the behavior and motivation of individuals within any given permanent or current-income class. Surely some consumers plan carefully and rationally with a long-term income horizon, as Professor Friedman claims. On the other hand, we all know from common knowledge that a sizable group—perhaps a majority—spend whatever they earn and can borrow. In addition to these extremes, one probably could isolate several other fairly homogeneous types. About the only type I would guess in advance would prove small is the group that actually saves the proportion of the income they had set out to save.
- 2. Savings almost certainly reflect basic personality traits, conscious philosophy, and character—particularly in the form of being able to resist temptation. (Very likely, Professor Friedman would lump these together under the head of "taste" and argue that they would be, or might be, essentially the same in all income groups. I would be inclined to disagree.) The point I would urge is that in studying this problem one should employ the techniques of motivation research in conjunction with the BLS type of data.
- 3. Comparisons of expenditure patterns of different income groups (and for all consumers over substantial periods) suffer from a difficulty that is overlooked very often. Some of the major consumption categories have a very different significance for the prosperous than for the poor. For example, clothing expenditures of high-income groups may include substantial amounts that are properly charged against vacation and entertainment costs. Outlays for housing for some represent a combination of payment for desired public school facilities, entertainment, vacation, a substitute for higher commutation costs as well as for shelter. Likewise, higher auto expenditures are closely related to the decline in housing outlays—both resulting partly from suburbanization. Similarly, highly processed foods and restaurant meals are best considered a combination of food plus personal service. Unfortunately, it seems that very little can be done to improve matters on this score—except to qualify one's interpretations of the data more carefully than is usually done.

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- 4. On this matter of whether to treat purchases of durables as savings or spending, is it not high time to find out how consumers view them? And is not the view of individual durables likely to vary by income groups? If so, would not measurements of the proportion of income saved by different income groups require reinterpretation?
- 5. In accounting for changes in the average propensity to consume over time and even for variations among income groups, attention should be given to the impact of sales promotion activities. These have increased more or less parallel with the rising average propensity to consume. One might mention that marketing men have, for some years now, taken credit for sustaining the present high levels of consumption and predict that any relaxation of sales promotion efforts would result in general depression.
- 6. In my opinion, it is dangerous to assume a continuing steady rise in the average propensity to consume. (Recall that Friend-Kravis refer to a high rate of savings over the last six years.) Important changes may be taking place in the spending-saving sphere. For example, many sociologists and marketing men point out the tendency—especially in the suburbs—to "live down to the Joneses" rather than to keep up with them. It is therefore essential to push ahead, along both a theoretical and empirical front, studies that will account for past changes in the consumption function and look ahead to anticipate changes yet to come. The penalty of facing a prolonged period of declining average propensity to consume (as economists, almost to a man, assumed about a decade ago) without preparing formidable offsets to savings is enormous human suffering and possibly violent political upheaval.

EVA L. MUELLER: I should like first to comment on the point of view expressed by Mr. Bilkey and Mrs. Campbell and then to make some remarks about the Friend-Kravis paper.

Mr. Bilkey has provided us with a valuable summary of past and current developments in the government's role as a protector of the consumer. Those of us who feel the need for staying abreast of these developments owe him a debt of gratitude for the descriptive part of his paper. And those among us who would like to see the government play a more active role in this area will welcome his emphasis on the inadequacy of present activities and budgets.

I would like to suggest, however, that Mr. Bilkey is dealing with a rather narrow concept of consumer protection. He focuses attention on protection against harmful business practices such as selling unhealthy food products, unsafe drugs, or excessively powerful cars; inadequate labeling; issuing fraudulent securities, etc. Important as such protection is, today's consumer is not greatly concerned with these problems. What we have learned from consumer surveys indicates that only a very small minority of people read labels or the producer's guarantee and that very few consult product ratings. Buying a well-known brand is often regarded as a sufficient guarantee of quality. Many people do not even know the price they are paying for a car

or the interest rate they are paying on their installment loan. While one might well argue that the government should assume a position of leadership in preventing abuses of the consumer, it is true that the inadequate scope of government activity in this area is facilitated by a lack of consumer interest.

Mr. Bilkey extends his concept of consumer protection when he speaks of assistance activities such as those performed by FHA, VA, and the Social Security Administration. I would like to extend the concept of consumer protection even further by arguing that the consumer today is interested primarily in protection against income declines, against inflation, and perhaps against speculation. It is in these areas that the government has extended its protective activities in recent years. Mr. Bilkey has hardly mentioned price controls, rent controls, and credit controls. He takes note of aggregative theories, but not of the aggregative policies that arise from them, nor of the concept of consumer protection that underlies these policies.

In this broader area of government policy the consumer is neither adequately informed nor adequately represented. Our surveys have shown that people are greatly concerned with protection against inflation, but for the most part see no connection between taxation and inflation or government bond buying and inflation. They know nothing about the impact of the major types of taxes or about the objectives of credit policy. I feel that private consumer groups and associations should direct more educational effort toward giving the consumer greater insight into the economic processes which affect him.

In administering our full employment policy, the government makes many adecisions which vitally affect consumers. Business groups, labor, and farm groups are able to exert some influence on these decisions. The consumer has no similar representation. For example, there are questions such as these. When credit is short, where should the restrictions occur: in credit to business, in consumer installment credit, in mortgage credit to consumers, or in credit available for the building of schools, hospitals, or highways? When the social security laws are revised, how is it decided that lowering the eligibility age for women to sixty-two has priority over other possible extensions of the law? When tariffs are raised or reduced or when price controls are imposed or removed, business groups make their opinions known and their influence felt. But the consumer hardly has a sufficient voice in the making of these decisions, even if we consider the influence which he might bring to bear through his vote or through his expenditure of dollars. Needless to say, better consumer education is a prerequisite for a more active exercise of consumer influence. I wish Mr. Bilkey had regarded these problems as falling within the scope of his paper.

I turn now to the permanent income theory and the Friend-Kravis paper. The permanent income theory itself assigns an important role to expectations when it distinguishes between income changes that are regarded as permanent and those that are regarded as temporary, or when it assumes that there exists something like a lifetime income expectation. Friend and Kravis have no direct information on expectations and therefore represent them by a

dummy variable, which is constant income or consumption. This variable can, however, be measured more adequately. During recent years the Survey Research Center has regularly asked consumers a battery of attitudinal questions. The answers to these questions provide us with direct measures of consumer optimism and confidence. The first thing that one learns from these data is that expectations are highly variable over time. Neither the theory itself nor tests which are based on dummy variables take sufficient account of this variability.

There is considerable evidence in our data that in the last few years consumer confidence regarding their own and the country's economic prospects has grown progressively. In this setting of widespread consumer confidence and optimism, our surveys have provided some indication that both people with income declines and those with past or expected income increases are large spenders relative to their current income. Both groups are likely to be heavy users of consumer credit. People with stable incomes seem to spend less relative to their income and are least likely to buy on credit. In other words, income declines tend to be regarded as temporary, while income increases are often viewed as being permanent and lead the family quickly to upgrade its standard of living. It would follow that in good times the average propensity to consume is higher for nonconstant income families than for families with stable incomes. The discrepancy should be particularly large among low-income families and smaller in the top income brackets. It is interesting that the Friend-Kravis findings (Table 1) are entirely consistent with this model.

I have advanced a tentative hypothesis regarding the expectations which prevail in a period of prosperity. Undoubtedly other models have to be formulated for periods of greater economic uncertainty. In this connection it might be pointed out that, due to the outbreak of the Korean war, the second half of 1950 was a period of great uncertainty. Mr. Oxenfeldt has already pointed out that spending motivations were unusual. It should be added that expectations also were unusual. A high degree of uncertainty prevailed, not only regarding money income prospects, but even more regarding prices and therefore real income prospects. Under these circumstances the planning horizon of consumers might well have been shorter than it is under ordinary circumstances. That is, current income may have been a more powerful determinant of spending in 1950 than it is at other times.

It is regrettable that the authors distinguish only between constant and nonconstant income families, but omit to make a further distinction between nonconstant income families who are moving up and those who are moving down the income scale. My contention that the consumption-income functions are not reversible therefore cannot be tested by their data.

Some questions might also be raised regarding the savings concept used. The authors state that the theories which they are testing include net investment in consumer durables in saving, but in several of their tables they treat it as consumption. The spending patterns of high and low savers would look even more similar if durable goods spending were excluded from con-

sumption (Table 4). Our own survey data suggest that there are three discretionary uses of income which are highly variable and which are particularly competitive with each other: (1) noncontractual saving, (2) discretionary nondurable goods expenditures (for vacations, some types of clothing, liquor, entertainment, etc.), and, in an intermediate position, (3) investment in consumer durables. The data analyzed here seem to support this notion of competitiveness. It would be useful to analyze these three categories separately rather than including one in saving, the other in consumption and the third on either side, depending on the definitions of the authors. The chances are that consumer research would profit greatly if we attempted to use variables which have a closer correspondence to the classifications which consumers themselves make.

### INTERNATIONAL ECONOMICS

# INTERNATIONAL COMPETITION IN MANUFACTURES

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Ι

These reflections are stimulated by the current problems of two countries: Great Britain and India, Both countries are short of arable land, relatively to population. Hence, as their national incomes rise, whether because of population growth or because of growing productivity, both need to import more food and raw materials. Both desire more rapid rates of growth than they have experienced in recent decades. In Britain there is general talk of an increase of 3 per cent per annum per capita, which is more than twice as great as the rate achieved in the forty years before the first World War, which rate was in turn higher than that of the next three decades. If a 3 per cent per capita rate is achieved, it may be expected to be accompanied by rapidly growing exports of manufactures. Similarly, India's plans are bound to run into difficulties for the same reason unless India's exports. of manufactures grow rapidly to pay for imports of food and raw materials. In fact, I have suggested in a recent article (in Capital, Bombay, December, 1954) that current Indian aspirations will involve India's capturing an extra 6 per cent of world trade in manufactures during the next twenty-five years.

The British and Indian need for rapidly growing exports of manufactures has sent me to the records seeking to discover how a country captures a significantly larger share of world trade in manufactures in a short time. This quest has begun with a statistical exercise—the compilation of a table showing annual exports of manufactures by the leading countries of the world since 1880, covering an estimated 96 per cent of world trade in manufactures at the starting point. Publication of this table is reserved for a later occasion. All that need be said at present is that comparability has been achieved by relying on the very detailed reclassification of trade returns for the years 1899, 1913, 1929, 1937, and 1950 which the late Dr. Tyszynski published in Manchester School in September, 1951. For the moment we will concentrate on a few countries in selected boom years, beginning with 1883. The results are shown in the accompanying table.

	1883	1890	1899	<u>-</u> 913	1929	1937	1954
U.S.A	3.4 37.1 17.2 14.6 4.8	3.9 35.8 17.2 14.5 5.1	9.8 28.4 19.5 12.6 4.9	11.0 25.4 23.0 10.6 4.3	18.2 20.4 18.4 9.4 4.9	17.3 19.1 19.7 5.2 5.2	25.8 15.8 11.6* 7.1 4.8
Canada Japan	$0.1 \\ 0.1 \\ 22.7$	0.1 0.3 23.1	0.3 1.3 23.2	0.6 2.1 23.0	2.9 3.4 22.4	4.2 6.4 22.9	4.8 3.7 26.4

## PERCENTAGE SHARES OF WORLD TRADE IM MANUFACTURES

In recent history, four countries have captured substantial shares of world trade in manufactures over short periods. The first was Britain, starting at the end of the Napoleonic Wars and continuing until about 1860, during which period the volume of her exports of manufactures increased by 5.6 per cent per annum. The second country was Germany, capturing about 6 per cent of world trade between 1890 and 1913. Thirdly, the United States, which even more spectacularly captured 6 per cent between 1890 and 1899—not to mention the even larger gains resulting from two world wars. Finally, there is Japan, whose capture of 3 per cent of world trade in manufactures between 1929 and 1937 attracts special attention mainly because it occurred over a period during which the total volume of world trade contracted.

II

In trying to understand these successes we have as usual to distinguish between the "how" and the "why." "How" is easy to answer. Every successful drive for trade in manufactures contains five elements: keen prices, a flood of salesmen, large-scale organization of selling, attention to customers' wishes, and liberal credit. Econometricians usually put all the emphasis on the first element, prices, because this is the easiest to measure. Businessmen, however, usually attribute much greater importance to sales effort, and it is clear enough that success or failure in selling is not always attributable to prices.

I have investigated the "how" question elsewhere (District Bank Review, December, 1954), and lack of space compels me to push on to the "why." What makes a country decide to use the appropriate selling techniques at a certain stage in its history, so that suddenly its manufacturers launch a drive which captures 5 per cent or so of world trade in a decade or two? Or, to turn the question around, how can one account for the persistent decline of Britain and of France?

<sup>\*</sup> Western Germany.

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We can begin by brushing away three British excuses. Today nearly every British businessman blames high taxes for the inadequacy of British exports. "What incentives have we," he asks, "to launch on such risky business?" One cannot prove that this factor is not important today; but it was certainly not important between 1883 and 1913, when Britain lost 12 per cent of world trade. Moreover, though it is often alleged that British businessmen have less incentives than Americans, the fact is that the proportion of profits paid in taxation (adding income and corporation taxes) is higher in the United States than in Britain. One cannot prove that the taxation excuse is not valid, but one must be forgiven for treating it with skepticism.

A second excuse popular in Britain today is inflation, which keeps in the home market goods which should be exported. Here again we have an argument which cannot explain the long decline of six decades before the second World War. As to its current validity, one notes that the French have had more inflation than most since 1945 but have increased their share of world trade in manufactures for the first time in many decades. Insofar as inflation is associated with accelerated capital formation, as in France, it bears fruit in accelerated growth, which makes possible both greater home consumption and also larger exports. It is beyond dispute that inflation may reduce exports, but in the historical perspective of so many decades it seems desirable to seek also for more fundamental causes.

One must take more seriously the argument that there was no British failure in the export sphere before the first World War. After all, through the last four decades before the war there was a mounting surplus on the balance of payments, due to invisible earnings growing very rapidly. It is therefore arguable that Britain exported as much as she needed to, and may even have exported too much, in the sense that some of the exported capital was lost. On the other hand, the reason why a slow growth of exports sufficed was that there was a slow growth of imports, which in turn was due to a slow growth of production and of national income. As Mr. Coppock has shown (Manchester School, Tanuary, 1956) there was a climacteric in the British economy in the 1870's, after which the rate of growth was much below the rate of the first three-quarters of the century. Since exports of manufactures were about one-third of industrial production, it is even arguable that the slow growth of production was due to the slow growth of exports. If production had grown more rapidly, imports would have grown more rapidly, and balance-of-payments difficulties would have arisen unless exports had grown more rapidly. So we need say no more for the present than that production, imports and exports, grew rather

slowly, both in comparison with the second and third quarters of the nineteenth century and also in comparison with contemporary growth rates in Germany and in the United States.

#### IV

Now let us examine the reasons offered for German and American success in exporting manufactures, concentrating on the period 1890 to 1913.

The main feature of this period is the rapid growth of steel production and the expansion of iron and steel and machinery exports relative to textile exports. Thus if one takes the exports of Britain, France, Germany, and the United States as given in the British compilation of 1909 (Statistics of British and Foreign Trade and Industry, Cmd. 4954), between 1890 and 1907, the combined exports of iron and steel manufactures and machinery increased by 126 per cent in value, while the combined exports of cotton and woolen varns and manufactures increased only by 47 per cent. The British kept up with the textile trade, their exports increasing by 40 per cent as compared with 47 per cent; but they were left behind in iron and steel and machinery, increasing their exports by 79 per cent as compared with 126 per cent. They also failed to keep up in steel production, increasing from 3.6 to 6.5 million tons, as compared with Germany's 2.2 to 11.9 million tons and the U.S.A.'s 4.3 to 23.4 million tons. This is the principal feature of the period. What accounts for it? We shall consider briefly five possible explanations.

First, natural resources. This is an obvious explanation of the enormous American expansion, but it does not easily explain why Germany went ahead so much more rapidly than Britain. It is true that the Gilchrist-Thomas process enabled Germany to exploit the phosphoric ores of Lorraine, but this removed a disadvantage rather than conferred an advantage. The ores were poor, and because of high transport cost they were not very attractive to the Ruhr. In terms of iron content, the Ruhr in 1901 was getting 53 per cent of its ore from Spain and Sweden, and only 15 per cent from Lorraine (N. J. G. Pounds, *The Ruhr*, page 112). Besides, Britain also had large supplies of cheap phosphoric ores. There is no reason to suppose that Germany had the advantage over Britain in ore supplies.

Secondly, geographical location. Germany's success was based on capturing the markets of Europe. Between 1890 and 1913, her exports (including food and raw materials) increased by 344 million pounds. Seventy-five per cent of this increase was to Europe. In the same period, only 34 per cent of Britain's increase was to Europe, 90 million pounds as against Germany's 259 million. But this cannot be attributed

entirely to geography. It is easy to see why Germany monopolized the markets of Russia or of Austria-Hungary. But by 1913 she was also selling more than Britain to Italy, to Norway, to Sweden, and indeed to every other European country except Spain, where she was running neck and neck. Germany was also selling more to the United States. Britain had virtually abandoned to Germany those markets which were absorbing ever increasing quantities of steel and of machinery to concentrate on those agricultural markets where consumer goods and railway equipment were still in great demand.

The United States, also, it should be noted, did not depend primarily on geographical location. Much of the big increase in the U.S. share of world trade between 1890 and 1899 was due to iron and steel manufactures (including machinery), the export of which increased from 29 million to 122 million dollars. There was a substantial increase to Canada, whose share in these exports rose from 10 to 18 per cent, but the share of other American countries slumped from 41 to 20 per cent, and much the biggest absolute rise was in the share of Europe, from 24 to 39 per cent. Up-and-coming nations sell all around the world, not just to their next-door neighbors.

Thirdly, technological leadership. Britain had acquired her commanding position through her innovations in textiles and in iron manufacture. As David Hume had pointed out in his essay "Of Money" in 1752, this kind of advantage must be temporary: "Manufactures gradually shift their places, leaving those countries and provinces which they have already enriched, and flying to others, whither they are allured by the cheapness of provisions and labour." Hume's arguments explain why Britain has lost the cotton export trade to Japan and to India, but in 1913 this had not vet happened: Britain was still supreme in textiles. Her failure was rather a failure to achieve technological leadership in the new trades, especially in steel, in machinery, and, less important, in chemicals. Wages were a little higher in Britain than in Germany, but this seems to have been of minor importance. The failure in chemicals is usually explained by saying that the British did not have sufficient respect for scientific training as compared with the Germans. The pioneering in electrical engineering was done in the United States, partly because the vested interest of the municipalities in gas obstructed the spread of electric lighting in Britain. (J. H. Dunning, Manchester School, September, 1956.) Various other explanations are offered of American pioneering in other kinds of machinery, of which perhaps the most important is the relatively high ratio of unskilled to skilled labor. But all of these explanations leave one doubtful. For it is not

<sup>&</sup>lt;sup>1</sup> See the excellent discussion by J. M. Low in the Manchester School, September, 1952.

necessary to be a pioneer in order to have a large export trade. It is sufficient to be a quick imitator. Britain would have done well enough if she had merely imitated German and American innovations. Japan, Belgium, and Switzerland owe more of their success as exporters of manufactures to imitation than they do to innovation.

We have spoken of failure to pioneer, but there was not complete failure to imitate. Britain did pass over to steel production, reaching 8 million tons in 1913, as compared with Germany's 19 million tons; and she was exporting 38 million pounds of industrial and electrical equipment in 1913, compared with Germany's 57 million pounds. There was an undoubted failure to sell machinery to Europe, but since she was doing well in selling metal products in other continents—as well as the limited demand of those other continents permitted—it is not so clear whether the emphasis should be on failure to sell machinery or on failure to sell to Europe; in other words, whether it was the nature of the product or the nature of the market that was the limiting factor. Perhaps there were elements of both.

Both elements can be explained to some extent, fourthly, by the doctrine of momentum. According to this doctrine, Britain equipped herself in the first half of the nineteenth century to sell cotton and railway materials, and she thus got into a rut which unfitted her to sell steel and machinery at the end of the century. There are several aspects to this, some emphasizing the nature of the product and others the nature of the sales effort required.

- 1. First, the willingness to invest. Investors are like sheep. It was proved at the beginning of the nineteenth century that Britain could sell cotton; so money was poured into this trade. As more cotton was produced, markets were forced open all over the world, by a stream of salesmen. Profits were reinvested in cotton. This could go on so long as there were new or expanding markets for cotton to conquer. But once it slowed down, the funds no longer going into cotton would not necessarily go into creating or expanding some other industry. They might just as easily go into foreign bonds. The same may be suggested, though with less plausibility, of the slow transfer from iron to steel. Long after steel had far surpassed iron, Britain remained the world's largest exporter of pig iron.
- 2. Secondly, the export organization created in the first half of the century—the merchant house—was not so appropriate for selling steel or machinery. It flourished selling consumer goods in agricultural countries; but the rich and expanding European market for industrial equipment escaped it.
- 3. The same is probably true of the financing of foreign trade; machinery requires something intermediate between the three-months

bill and the twenty-year bonds in which Britain excelled. Germany's intermediate credit terms were more to the point.

- 4. The attitude towards science in industry may be attributed to the same cause. The professional scientist played little part in the eighteenth-century innovations in textiles and iron manufacture, on which British success was based. Consequently there was little respect for him in British industry, and exaggerated respect for the self-made man. This became a disadvantage in a later era when science was contributing to innovation.
- 5. The conservatism of British steel producers was a byword at the end of the nineteenth century. They lagged in copying German and American innovations in fuel consumption, in chemical control of processes, and in mechanization; and above all, although Britain had large reserves of phosphoric ores, they left it to Germany to develop cheap basic Bessemer steel, which soon came pouring into the British market, while they clung to expensive acid open-hearth steel. It is sometimes argued that newcomers have an advantage over originators because they install the latest equipment, while the originators are stuck with old-fashioned plant which it does not pay to scrap. However, considering that British steel output doubled between 1890 and 1913, there was plenty of opportunity to adopt new methods. This conservatism was attributed at the time to the industry being in the hands of old family firms with aging directors; it was probably due at least in part to the self-satisfaction which tends to follow successful pioneering.
- 6. The slow growth of the engineering industries was probably even more important than the slow growth of the steel industry, since the latter was presumably due to the former. By 1913, home consumption of steel per capita had reached 405 pounds in Germany but only 330 pounds in Britain. This in turn was due to low domestic capital formation, not compensated by capital export; not compensated because, whereas capital export to the agricultural countries provided a market for railway equipment and for textiles, home investment (or for that matter, capital export to Europe, which was mainly left to Germany and to France) would have stimulated the engineering industries producing new types of industrial, electrical, or public utility equipment, and these were the industries where leadership passed to Germany and to the United States. The low level of capital formation at home was sometimes attributed to abundance of skilled labor, but this argument is rather doubtful. It may apply when capital is substituted for skill; but much capital was substituted for mere brawn, some economized materials, and some incorporated new techniques not available in existing skills. Besides, capital was at least as cheap in Britain as in Germany or the United States, if not cheaper. Conservatism was at least a part of the answer.

- 7. Some contemporaries found their explanation in financial institutions. Cotton and iron had largely been self-financing, so the London capital market had concentrated on gilt-edged securities and on foreign investment, to the exclusion of domestic industry. Steel and engineering needed greater funds if they were to adopt the large-scale production methods favored by Germany and by the U.S.A. But whereas in those countries industry could borrow from banks and other institutions, in Britain momentum kept the capital market to its accustomed tracks, with the effect that ever increasing sums were invested overseas. It is clear that the capital market was to some extent imprisoned in its own habits—it went on investing overseas in the eighties though the terms of trade were moving against agriculture, and again in the twenties, though the real surplus was small (Britain was borrowing short to lend long). But it is not as clear that British industrialists could not have raised more funds for home investment if they had tried.
- 8. Cotton and iron factories were small, and so Britain acquired a firm belief in individualism and in atomistic competition. Steel, machinery, and chemicals, on the other hand, are notable for large enterprises, mergers, and monopolistic behavior. Insofar as these industries need a monopolistic atmosphere in which to survive, the British climate was unfavorable.
- 9. British superiority in the first half of the century convinced industrialists of the virtues of free trade. Consequently, when new industries began at the end of the century in which they held no superiority, Germany and the U.S.A. poured manufactures into the British market and made it difficult for comparable British firms to reach the scale of production needed to become viable. Between 1883 and 1913, Britain increased the volume of her import of manufactures faster than anything else: food imports by 2.0 per cent per annum, raw materials by 1.8 per cent per annum, but manufactures by 3.4 per cent per annum. On the other hand, since Britain's net imports of metallic goods (excluding nonferrous metals) in 1913 were only 36 million pounds, as compared with net exports of metallic goods of 127 million pounds, it is not so obvious that the absence of a tariff was decisive. If imports depressed prices as much as the argument requires, would they not also have been larger in relation to total output?

There is no space to discuss each of these aspects of the doctrine of momentum in detail. Not all would bear closer investigation; but its general plausibility seems beyond dispute.

Thus we come to the last of the explanations of a successful export drive, which is the impact upon imports and exports of rapid industrial growth. As industry grows rapidly, so does domestic income and so, therefore, does the demand for food and for raw materials. In short-

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of-land countries, such as Britain, Germany, and Japan, this forces a rapid increase in imports of food and raw materials. Now an increase in imports is deflationary; so manufacturers can keep going only by expanding their exports of manufactures, and this they are able to do because the country's imports provide foreign countries with the necessary purchasing power. Manufacturers will only behave in this way. however, if they have an irresistible urge to invest, coupled with the will and the techniques required for selling exports of manufactures. If the urge to invest is weak or if selling techniques are poor, the deflationary pressure of imports simply checks the investment drive and slows down industrialization to the pace which the rate of growth of exports is able to support. This seems to have been the basic difference between Germany and Japan. on the one hand, and Britain, on the other. The Germans had the irresistible urge to invest in steel, machinery, chemicals, and such in the last decades of the nineteenth century, and broke into export markets, using whatever techniques were necessary. The British, by momentum and tradition, were otherwise occupied. In earlier decades they had had an irresistible urge to invest in cotton and in iron, which had carried them breaking into world markets with the necessary techniques. The rate of expansion which this permitted slowed down after 1860, but rather than invest at home at the old rate in the newer industries, they slowed down home investment to the pace of cotton and iron and put their money instead into foreign investment in agricultural countries, where it financed sales of cotton and railway materials without adding to Britain's productive capacity.

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But what would have happened if Britain had invested more at home and less abroad? The impact effect would have been smaller exports. However, let us assume that production and imports would have grown faster and that manufacturers would have been driven into a faster rate of growth of exports. How would this have affected the terms of trade? They would probably have worsened, but we cannot be sure by how much. British capital exports would have been a smaller proportion of income, but since income would be growing more rapidly, the absolute deficiency would constantly diminish. Moreover, British savings might have been higher, giving greater scope for home and foreign investment simultaneously: the adverse terms of trade after 1900 seem to have been accompanied by wider profit margins and larger savings. Again, the deficiency in British capital exports might have been made good by other nations, attracted into the field by improving terms for primary products. If we assume that British exports would have grown faster, possibly German exports may in consequence have grown less rapidly. This might have checked German home investment and made Germany a larger exporter of capital. In other words, if the British urge to invest had been more irresistible than the German, it might have been the Germans who turned to capital export instead of to home investment. In any event, the terms of trade would have had to worsen quite sharply to offset all the benefits of greater home production. The capital-output ratio at home was only 3½ to 1, compared with returns of 20 to 1 from foreign investment; and even if one doubts that the marginal capital-income ratio was constant at this level, there is little reason to doubt that—apart from the terms of trade—investment at home would have raised real income faster than investment abroad. One cannot prove that the gain would not all have been offset by adverse terms of trade, but one may remain very doubtful that it would.

V

As in all scientific enquiry, seeking causes of economic growth is like peeling an onion; as each skin is removed, a new one is revealed. Our explanation of export drives has left us with the not very attractive concepts of "momentum" and "an irresistible urge to invest." If Britain and India are to have the successes they desire in the next two decades, these are the forces by which they must be driven. But how does a nation work itself up into this frame of mind? Why did Germany suddenly go this way in the last quarter of the nineteenth century? Here we pass from international economics into the sphere of philosophical speculation; so I gladly leave the subject to another occasion.

## EUROPEAN CONVERTIBILITY

## By Frank W. Fetter Northwestern University

Since World War II, as after World War I, restoration of the foreign exchange position of the European currencies has loomed large on the world's economic agenda. But once we get beyond the fact that we are dealing with a "postwar" monetary problem and examine critically what the argument is all about, the differences between the two postwar situations are more striking than are the similarities.

In the twenties the emphasis was on the obligation of central banks or governments to convert their national currencies into gold or dollars at a fixed rate; today it is on the right of individuals to use the currency they own to buy foreign currencies freely at the market rate. whatever that rate happens to be. In the sense in which the word convertibility is generally used today—absence of exchange control on current transactions—all European currencies were convertible within a few months, at most, after the Armistice of 1918, even though in the economic terminology of that day they may have been called inconvertible. It was assumed almost without question that if a country chose the right rate it could, with the appropriate internal policies, maintain its currency freely convertible at a fixed rate in gold or dollars. In the debates of the twenties the issue was not whether a country could convert but at what rate it should convert. Furthermore, it was not considered essential to wait upon the action of other countries, and small European countries returned to the gold standard while the pound was still a fluctuating currency. The European convertibility issue today is discussed on a quite different level: whether it is within the power of a country, with any fiscal and monetary policy that is politically acceptable to its people, to make its currency freely convertible into dollars at any rate unless other countries—and in most cases this is considered to be England—also do the same thing.

A country in the twenties, if it were to establish and maintain a convertible currency at a stable rate, had to meet two conditions: (1) an ability to hold its cost-price structure in line with that of other countries, except for short periods; (2) a supply of gold and foreign exchange sufficient to cover any short-run disequilibrium in the balance of payments, whether from structural changes, income change, or price changes.

Today, with exchange control in so much of the world, an individual

country as a condition of convertibility not only must meet this test for a multilateral world but it must meet a further test: a surplus with convertible countries at least approximately equal to any deficit with inconvertible countries. Over-all balance is still a necessary but not always a sufficient basis for convertibility. A European country, even though running an over-all 100 million dollar surplus, cannot permanently keep its currency convertible if its deficit is 50 million with the dollar area and its surplus 150 million with soft currency countries. But a surplus of 50 million dollars with the dollar area will cover a deficit of 50 million dollars any place in the world.

This second situation of the bilateral balance of payments with the dollar area has been stressed in much of the discussion as to why European countries have not been able to move further toward convertibility. It is very easy, however, for a country to persuade others and perhaps convince itself that the "dollar problem" is the barrier to convertibility when the country in fact has an over-all deficit, or even a deficit on its nondollar trade as well as on its dollar trade, and would be in balance-of-payments difficulty even if all of its foreign exchange receipts were freely convertible into dollars.

It is true that there have been suggestions in the postwar literature that the supposed peculiarities of international supply and demand elasticities may make it impossible for some countries ever to maintain an over-all balance without direct controls, no matter what their domestic monetary and fiscal policies. Despite the ingenious work that went into much of the "perverse elasticity" analysis, I have serious doubts whether these studies have been of much practical significance for international monetary policy. One of the shortcomings of many of these studies, aside from what appear to have been technical deficiencies in the statistical procedures, was that they lacked historical perspective. They proved too much. By their standards it would have been impossible for many countries before 1914 to have maintained balance-of-payments equilibrium without direct controls, and by their standards it would be impossible to maintain equilibrium in a domestic market without direct controls.

Insofar as there is a postwar obstacle to over-all equilibrium, economists must seek the major explanations, not by calling on the statisticians and econometricians, but by getting guidance from the political scientists and the sociologists. If there is not sufficient internal political discipline in a country to keep its finances and monetary system under control—or, if you prefer to put it differently, if there is a mass desire for a higher living standard that people, rightly or wrongly, think can be obtained more easily by monetary expansion—there may well be a chronic tendency toward inflation. And this may mean a chronic

balance-of-payments disequilibrium that makes convertibility impossible, at least on any other basis than a steadily depreciating foreign exchange value, no matter how favorable the elasticities or how fully convertible into hard currencies all foreign exchange earnings may be. It is economics in the tradition of Adam Smith—the behavior of people—and not economics in the tradition of Walras and Edgeworth—the solving of equations—that can provide the best explanation as to why the road to convertibility in Europe since 1945 has been so long and stony.

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Of the European countries west of the Iron Curtain the only one whose currency is generally classed as convertible is Switzerland. In the past two years, however, several other countries, notably Belgium, Holland, and Germany, have made great strides toward convertibility. It is my belief—and if a paper must have a thesis, this is it—that it is a mistake to discuss the problem of European convertibility as if Europe were an economic unit and to make a judgment as to when or under what conditions this geographic entity, Europe, can make its currencies convertible.

There is no inherent reason why countries, simply because they happen to be in the same continent, should face the same internal economic problem or be in the same economic relation to the United States. Why, then, is there today such a widespread assumption that the European currency problem is a unit and that convertibility of Continental currencies can follow only in the wake of British convertibility? The answer is a mixture of economic fact, mythology, reverence for the past, and confounding of political power with economic strength.

The hard core of truth is that in the immediate postwar years every European country had a common economic problem of rebuilding its physical plant and re-establishing its trade relation—a problem that was aggravated by loss of foreign investments, disruption of Far Eastern trade, and the technical progress of competitors in many lines in the United States as well as in other non-European countries. This situation created many difficulties, but in the foreign trade field it was generally called the dollar problem: an inability, given existing incomes, prices, and supply and demand schedules, to balance dollar receipts and dollar earnings without direct controls. I would suggest, however, that we have exaggerated the size and the hardness of this core by two misinterpretations: (1) thinking of the dollar imbalance as the great, or even the only, obstacle to convertibility and ignoring the over-all disequilibrium that for so many European countries would have created insuperable obstacles to immediate convertibility, even had all of their exports gone to the United States; and (2) ignoring or minimizing the

great difference between individual countries, particularly in the last five years.

The Organization for European Economic Cooperation and the European Payments Union have made a great contribution to European economic recovery. But the existence and operation of these organizations, desirable as they have been, have helped to perpet late the idea of an undifferentiated European convertibility problem that is not in accord with the facts of 1956, however correct that emphasis may have been in the dark days of the immediate postwar years. This emphasis on a common convertibility problem is also fostered by attaching undue importance to the position of Great Britain in trade and finance, and hence of continuing to think of British action as the prerequisite to European convertibility. This confusion stems in part from identifying the idea that Britain is the bulwark of Western European defense with the idea that it is the keystone to European convertibility; in part from a failure to recognize how much the commercial and financial leadership of Britain has been impaired since 1914; and in part from attributing to the sterling area a greater solidarity and "natural economic basis" than is in fact the case.

This idea of a common European convertibility problem based on a European dollar problem is fostered by the other side of the international monetary coin: the picture suggested by the so-called "dollar area." This is shown on the map as unbroken in the Western Hemisphere from the Arctic regions to the dollar rich oil fields of Venezuela and coffee plantations of Colombia, with a few other separated areas thrown in. There is nothing inherent in geographic location that created this dollar area. The accidents of geology and invention, land ownership, the organization of production, plus the tastes of the American market, and all abetted by American tariff policy, have contributed to make the dollar area. Let Americans give up coffee and turn to tea, discover an El Dorado of oil in New England, make further tariff reductions, or modify the farm support program, and the picture of the dollar area, of the EPU area and of the sterling area as "natural economic units" would take on a different aspect.

Against this background of analysis the European convertibility problem can be divided into three parts: (1) the possibility of Britan's return to convertibility; (2) the possibility of the other European countries converting if Britain did; (3) the possibility of individual European countries, or a group of countries, converting regardless of Britain's action.

On the first point—British convertibility—there is little to add to what many others have said. Whatever the prospects of British convertibility may have been six months ago, today as a result of the Siez

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situation it seems further in the future. However, the British talk of convertibility between 1952 and 1956 probably exaggerated the likelihood of any genuine convertibility. In the first place, the British proposals sprang as much from weakness as from strength; that is, from the feeling that the rumblings of unrest among sterling area members and the flexing of the financial muscles of a reborn Germany demanded relaxing of British exchange controls if London were to maintain its position as an international financial center. Dr. Per Jacobsson, the new head of the International Monetary Fund, writing two years ago for a Swiss symposium on The Convertibility of European Currencies, was simply stating directly what others have suggested more obliquely when he said: "Only a convertible pound can hold the sterling area together permanently." Secondly, the British feelers on convertibility were so hedged, if one can believe published reports, with reservations about international quarantees, that the real significance was not as great as the financial headlines might have led one to believe.

The second aspect of this tripartite problem—would the currencies of Continental Europe become convertible were Britain able to convert—is of course conjectural until Britain does convert. But because of the bearing of this on the general problem of the diversity as compared with the unity of European convertibility problem, at least a comment is in order. A large part of the other European countries probably would shortly follow the British lead. There are some that, because of general over-all balance-of-payments difficulties, as in the case of Greece and France, or the technical difficulties of getting rid of multiple rates, as in the case of Finland, might not be able to convert at once even with a fully convertible pound.

But the most important aspect of European convertibility—and which for economists has become more and not less important as a result of the Suez crisis—is the possibility of convertibility independent of England. I realize that the weight of economic opinion has been that Continental convertibility must wait upon British action. In the Swiss convertibility symposium, Professor Gottfried Haberler said that despite the great German recovery, for European convertibility "British leadership is still indispensable" (op. cit., page 49), and Professor Friedrich Lutz, now at the University of Zurich, after mentioning that Holland, Belgium, and Germany might start a convertibility club, added: "Above all, the participation of England in the group is essential, even though its balance of payments position may not be as favorable as that of the other countries mentioned." (Op. cit., page 314.)

<sup>&</sup>lt;sup>1</sup> "Die Konvertibilität der Währungen als Realisierbares Ziel," in Die Konvertibilität der Europäischen Währungen (Zurich and Stuttgart, 1954), p. 63.

In 1954 and 1955, in a visit to Europe that took in eleven countries, I tried out the idea of convertibility independent of England on a number of economists, businessmen, and commercial and central bankers. In England the very suggestion seemed to be regarded as heresy; in the Scandinavian countries the idea of convertibility independent of England was considered most unlikely, although the threats of unilateral action by Germany were stimulating some reflections, mostly skeptical; but I received the impression that there was a real possibility of a convertibility club comprising Switzerland, Germany, and the Low Countries, and possibly Austria, and which might bring in one Scandinavian country. I would like to develop the reason why this possibility has a basis in economic fact and why this basis becomes solider and broader the more we sweep away the mists of phraseology and the unconscious acceptance of traditional economic relations that are weakening.

The reasons are three cognate facts: (1) Several countries have been running a large and consistent surplus in the EPU. (2) Several countries—in most instances those with an EPJ surplus—have reduced very substantially their dollar area deficit in the last three years and in some cases appear to have a dollar surplus exclusive of military expenditures. (3) The gold and dollar reserves of a number of Continental countries have increased steadily and substantially in the last five years.

The main facts as to balance of payments within the EPU, and with the dollar area, are:

Germany, Switzerland, Belgium, and Holland have been running large surpluses which reached a cumulative total in March, 1956, of nearly 3.5 billion dollars, and Sweden had a small cumulative surplus. All of the other members had a cumulative deficit, with Britain and France accounting for over 1.6 billion dollars of the total. The surplus and deficit figures since then are in line with this same national pattern. This situation has an important bearing on the possibility of convertibility by Continental countries, because when a country has a large and persistent European surplus it is unlikely that convertibility by that country would be broken by a European run for dollars.

But a surplus with EPU countries, no matter how large or how long continued, is not sufficient to guarantee over-all convertibility. The ability of any European country or group of countries to establish and maintain such convertibility in the last analysis depends, if in deficit with nonconvertible areas, on a dollar surplus equal to the non-

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<sup>&</sup>lt;sup>2</sup> Bank for International Settlements, Twenty-sixth Annual Report, 1955-56, p. 206. <sup>3</sup> International Financial Statistics (published by the International Monetary Fund, November, 1956), p. 13.

dollar deficit, and even if in surplus with nonconvertible areas, on close to a balanced dollar position. The over-all current account deficit of OEEC countries with the dollar area, exclusive of military receipts, was estimated by the OEEC at 900 million dollars in 1953, 1,375 million in 1954, and 1,100 million in their first half of 1955, although these deficits were more than covered by military expenditures.4 These figures, however, must be used with great caution because of the difficult interpretative problem of the bearing of military expenditures on the balance-of-payments position: because a technical deficit with the dollar area may be offset by dollars obtained from nondollar countries; and because a current account deficit in connection with private investment from the dollar area is not necessarily a sign of dollar weakness. Moreover, this over-all estimate conceals the widely differing situations of individual countries.

Though it may be impossible, for technical and interpretative reasons, to make any clear-cut statements about the dollar area balance of payments of European countries, there is no doubt as to what has happened to their gold and dollar reserves, or as to how those reserves stand in relation to their imports. Of course large reserves are no assurance that convertibility can be maintained, and limited reserves are not inconsistent with a firmly established convertibility. No matter how large reserves may be, they can dwindle quickly in the face of cost and price imbalance, particularly if that situation comes on top of unfavorable structural changes or changes in the terms of trade. However, the steady growth of reserves, at a time when import restrictions are being relaxed, indicates a basic strength in a country's currency; and the holding of reserves equal to many months' imports suggests the ability to meet seasonal and cyclical fluctuations and to cope with structural changes in trade and alterations in the terms of trade.

In June, 1956, total gold and short-term dollar holdings of the United Kingdom were a little less than 3 billion dollars. The figure for the Continental EPU countries was nearly five times as great, in addition to the equivalent of over a half billion dollars in sterling balances. German holdings were only slightly below British holdings; Swiss holdings were over four-fifths of British holdings; and Dutch and Belgian holdings combined were also about four-fifths of British holdings. British holdings were less than in 1937 and less than in much of the period from 1949 to 1955, whereas the Continental figure was about double 1937, more than double 1949, and had shown an almost steady increase since 1949.5

In 1955, British gold and dollar reserves were equal to less than

<sup>\*</sup>Seventh Report of the OEEC (1956), p. 55.

\*Federal Reserve Bulletin, March, 1956, pp. 304-305, October, 1956, p. 1137; International Financial Statistics, November, 1956, pp. 16-18.

three months of commodity imports, the lowest figure for any Western European country except Denmark, Finland, Norway, and Sweden. In Switzerland gold and dollar reserves were equal to nearly nineteenmonths' imports, in Germany the figure was nearly five months', in Belgium and Austria about four and a half months', and in Holland, nearly four months'.

These figures are not in themselves proof, but they all contribute to a picture suggested by many aspects of the European economic situation of the postwar years. No one could deny that Britain is still a great figure in international trade and finance, with an organization and an experience unmatched in any other country. Certainly the convertibility of the pound would hasten Continental convertibility and give it a firmer basis. But the problem is not one of absolutes, but of relatives, and of appraising, and adjusting to, changing forces in the international economic field. The last five years have brought a remarkable economic recovery and development in many Continental countries. This is shown in the increase in production, the stabilization of domestic prices, and the expansion of foreign trade, as well as in the growth of gold and dollar reserves. All these are developments that make for the easing of exchange controls, and we should not underrate the ability of a number of Continental countries to make their currencies convertible in the near future.

<sup>&</sup>lt;sup>6</sup> BIS, Twenty-sixth Annual Report, 1955-56, p. 164.

#### UNITED STATES CAPITAL INVESTMENTS IN CANADA

# By Frank A. Knox Queen's University

Economic prospects and national economic policy have been much discussed in Canada recently. Questions are being raised about the rate at which our natural resources are being exploited and about the considerable part which United States owned and controlled enterprises play in that exploitation. While such debates are nothing new in Canada, this one has received widespread attention in the press and in Parliament. The Dominion Bureau of Statistics has issued a very thorough analysis of our international investment position and its development since 1926.1 Three important papers relating to this topic were read at the annual meeting in June last of the Canadian Political Science Association by the President of the Association, Mr. J. D. Gibson, Assistant General Manager and Economist, of the Bank of Nova Scotia; by the authors of the Dominion Bureau of Statistics report, Messrs. C. D. Blyth and E. B. Carty; and Mr. G. V. Ferguson, editor of the Montreal Star newspaper.<sup>2</sup> A Royal Commission appointed by the federal government to enquire into "Canada's Economic Prospects" over the next quarter century is expected to issue a report early in the new year. It is the purpose of this paper to describe this discussion briefly, to examine the statistics of the movement of United States capital into Canada, and to offer some concluding observations.

The discussion of these matters has been brought on mainly by two important developments. In recent years our growing trade dependence upon the United States has been strikingly emphasized; between 1926 and 1955 the percentage of our exports going to the United States rose from 37 per cent to 60 per cent; the import percentage rose from 67 per cent to 72 per cent. At the same time the growing needs of the American industrial system for raw materials and the spectacular revelation by new prospecting methods of the potential mineral wealth of our north country strongly suggested that the portion of our exports going to the United States was likely to rise still further. Because of this situation, the inflow of United States capital into Canada rose sharply and tended to concentrate on direct investments which involved control of, as well as investment in, Canadian enterprises. Both these developments struck at our economic independence. Our dependence

<sup>&</sup>lt;sup>1</sup> Canada's International Investment Position, 1926-54 (Ottawa, 1956).

<sup>&</sup>lt;sup>2</sup> Canadian Journal of Economics and Political Science, November, 1956, pp. 421 ff.

upon one market was becoming very great indeed and foreign ownership of investments in Canada was being accompanied by foreign control in unprecedented proportions.

The debates in the House of Commons at Ottawa during the 1956 session of Parliament reflect faithfully the variety of popular opinions on these matters. The most spectacular event of the session was the acrimonious debate produced by the government's attempt to secure quick passage of a bill to set up a crown corporation for the purpose of building a natural gas pipeline across the relatively rugged and underpopulated part of the Canadian shield which lies in the northern part of the province of Ontario. It was to be part of a line to bring gas from the province of Alberta to the markets of the industrial east. The violence of the debates which were thus aroused had little directly to do, however, with the fact that United States capital was involved. It arose rather out of disputes as to parliamentary procedure, particularly regarding the use of closure to get the bill through by a dead-line which the government declared had to be met.

However, before this closure question arose, the main opposition party, the Progressive Conservatives, declared their opposition to the pipeline proposals on the ground that public funds were to be used for a scheme which would result in handing over to foreign corporations a great Canadian project. The leader of a second opposition party, the Cooperative Commonwealth Federation, socialist in general economic philosophy, stated flatly during debates, "I believe the domination of our economic life by these foreign corporations is threatening the independence of the country." A member of the Social Credit Party questioned whether or not we were "paying for our prosperity" by "selling off our assets to foreign investors." A Progressive Conservative member warned that the Canadian economy was being drawn into a continental economic system and that such "integrated North American economic policy" might very well make Canada a "vassal state."

A debate dealing mainly with the impact of United States investment in Canada was initiated in the House of Commons in July last when Mr. George Drew, the leader at that time of the Progressive Conservative Party, moved a resolution calling for the adoption of a natural resources development policy. In his opening statement, Mr. Drew noted that, thanks to the "fantastic picture" (op. cit., page 5774) of natural wealth recently revealed, Canada now had the basic requirements of resources, industrial power, fuel, and food producing power for a very large population. There lay ahead not just economic growth but one of those "upsurges in the life of a nation which have carried

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<sup>&</sup>lt;sup>3</sup> House of Commons Debates, Vol. 98, 3rd Session, 22nd Parliament (Ottawa: Queen's Printer), pp. 2184, 2188, 2196.

one country after another to positions of commanding importance throughout the centuries." Some achieved such eminence despite meager resources; others, having great wealth, "lived on their resources without any thought for the future" and thus sank into "relative unimportance after their resources had been exhausted." The government's policy, he contended, stimulates a maximum exploitation of our resources for export with the aid of great amounts of foreign capital. We thus plan to sell our products in their raw state to the United States and buy the finished goods back from them, leaving the major part of the profit in American hands. The severe economic dangers which could arise from this policy should be reduced by giving "greater encouragement" to the "building within Canada of heavy and light industry while at the same time increasing the size of our domestic market by well-planned immigration." (Op. cit., page 5776.)

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From these general and oft-repeated arguments, Mr. Drew turned more directly to the "growing danger" from United States ownership of a "large proportion of Canadian industry and mineral production." Here he was fortunately more specific than much of the Canadian discussion has been. This foreign ownership and control puts into the hands of people living outside Canada decisions as to "plans of production, pricing and dividend policy" and of policies "as to the further extension of their activities." To reply that since these companies were in Canada and subject to Canadian laws, control remained in Canada was not accurate, he contended. The laws of Canada "do not affect their [that is the foreign parent's] control over these fundamental and vital aspects of their [that is, the Canadian subsidiaries] activities." Also these controls over Canadian business "represent a substantial loss of economic independence in many lines of production." Becoming yet more specific, he listed a number of disadvantages that may arise out of the fact that the Canadian corporation is but one of a number of branches, perhaps in several countries, in subordination to the main operations of the corporation in the United States. Such possibilities are listed as: discriminatory pricing of the product of the Canadian plant to the disadvantage of the Canadian consumer; fluctuations in the levels of production at the Canadian branch brought about by the diversion of the parent corporation's export business to its branches in the United States or elsewhere; the mounting total of dividend payments as the American-owned property grows and the possibility that the Canadian earnings may be diverted at any time to financing the parent corporation's operations outside Canada. Other current objections, such as lack of Canadian ownership of shares in American subsidiaries in Canada, could, he admitted, be minimized by changes in Canadian corporation and tax laws and regulations, but as long as

we remain a private enterprise country nothing that Canadian regulations can do would remove, he believed, the basic threat to our economic independence posed by a growing reliance upon foreign capital and enterprise. (Op. cit., pages 5777 ff.)

In replying for the government, the Minister of Trade and Commerce, Mr. C. D. Howe, pointed out that there has been a "development policy since 1940 resulting in a balanced growth, financed largely by Canadian savings but assisted materially in certain key industries by foreign capital, know-how and enterprise" and that Canadians have enjoyed the benefit of "prosperity unparalleled in the history of the country." (*Ibid.*, pages 5795 ff.) Moreover, there has been a pronounced trend both to the greater fabrication of Canadian raw materials before they were exported and to the decrease of foreign capital inflow as a proportion of gross capital formation in Canada. Were Canadians to restrict considerably their future export expansion in the interests of domestic production, there would be a net decline in jobs, the Minister contended, and the resources thus conserved might remain in the ground forever, since potential customers of Canada might go elsewhere for their supplies of raw materials.

Since the end of the Parliamentary session, the Minister of Trade and Commerce has shifted from this relatively passive defense to making speeches which vigorously assert a point of view remarkably like views expressed in Parliament by the leader of the opposition. On October 15 last in a speech to the Canadian Club of Chicago and on the following day to the Milwaukee Association of Commerce, Mr. Howe made ample acknowledgement of the very important role the United States capital and enterprise play as a supplement to the very high but still insufficient Canadian level of savings and then turned to those aspects of United States owned and controlled enterprises in Canada which arouse concern. Canadians do not like to see American corporations treating their branches or subsidiaries as if they were located within the boundaries of the United States itself; they resent the exclusion of Canadians from shareholding and from top management positions in Canadian subsidiaries of United States corporations: Canadians are alarmed when they see "the financial results of large scale Canadian enterprises treated as if they were the exclusive concern of the foreign owners." Agreeing that there were difficulties in admitting Canadians as shareholders or top executives, the Minister strongly urged that Canadian participation should nevertheless be enlarged and that more information on the financial results of the Canadian branch's operations should be offered than the Canadian law requires. In this way, the United States parent corporation would reap substantial advantages from a growing "Canadian sense of identity

with the United States controlled enterprise." A "careful reexamination of export policy affecting Canadian branch plants" was particularly requested by the Minister. Because of the small size of the Canadian domestic market, every chance should be given to the Canadian subsidiary to share in the world export trade of the parent corporation, particularly in British countries. When fixing their tariffs, Americans should consider, thought Mr. Howe, the very great market their exporters find in Canada—their "best customer." Yet "Americans apparently take it for granted that they will continue to be able to bring raw materials from Canada while placing high tariffs against the import of Canadian manufactures and threatening still further restrictions."

The general tenor of the views held by those who have been most vocal in the current discussion is that Canadians should conserve for the future as much of their raw materials and power resources as can be managed without too great economic cost; that such products as are exported should go abroad in as highly processed a form as can be managed; that Canadian development should be carried out as far as possible by Canadian capital and enterprise; and finally that Canadians hope that the controllers of foreign-owned enterprises on Canadian soil will so carry on their businesses as to contribute as much as a Canadian enterprise would to the building of the sort of economy Canadians hope to see in the future.

The essential facts about the investment of nonresident-owned capital are very accessible in the excellent specialized study on this topic issued early this year by the Dominion Bureau of Statistics<sup>5</sup> as well as in its current Balance of Payments and other statistical publications. Up to 1914, outside capital invested in Canada came almost solely from Great Britain, By 1914, less than one billion dollars of United States capital had been invested in Canada. During the first World War Canada had to turn for its foreign borrowings from London to New York and since then British and other overseas capital has played a minor role. United States investments have steadily risen till in 1954 they formed 77 per cent of all nonresident-owned capital invested in Canada (Table 1). Not only has there been this shift in the source of foreign investment capital but important changes have occurred in the form which that investment has taken. The proportion of the American investment which is in bonds has fallen and that in direct investments has risen from 43 per cent in 1930 to 60 per cent in 1954 (Table 2). The "largest part of this group of investments is made up of whollyowned subsidiaries of foreign concerns." (Op. cit., page 24.)

<sup>5</sup> Canada's International Investment Position, 1926-54 (Ottawa, 1956).

Government of Canada, Department of External Affairs, Information Division, Statements and Speeches, No. 56/20 and 56/21.

TABLE 1 FOREIGN CAPITAL INVESTED IN CANADA, 1950, 1945, 1954 (In millions of dollars)

	1900	1918	1930	1945	1954
Total Investment	1,232	4,536	7;614	7,092	12,469
Percentage from United States	14 85	36 60	61 36	70 25	77
Other countries	1	4	2	5	6
preceding date		3,304	3,078	-522	5,377
Percentage of increase from United States		44	- 98		86

Source: Dominion Bureau of Statistics, Canada's International Investment Position, 1926-54 (Ottawa, 1956), page 11.

The rise in direct investment comes not only from the reinvestment of earnings but also from new capital imports (Table 3). In the years 1951-55, capital imported for direct investment exceeded the capital inflow through the issue of new Canadian securities abroad or from the net sale of outstanding Canadian securities of nonresidents (Table 4).

The concentration of nonresident—particular v United States—capital in the dynamic sectors of the Canadian economy has been very much in the public eye. In mining, the percentage of United States capital to the total capital investment has risen markedly since 1930, grown spectacularly in recent years, and in 1953 exceeded Canadian capital invested (Table 5). In all manufactures, United States capital amounted in 1953 to 69 per cent of Canadian capital employed and 38 per cent of the total capital employed. Within the mining and smelt-

TABLE 2 FOREIGN CAPITAL INVESTED IN CANADA, 1930, 1945, 1954 (In millions of dollars)

	1930	1945	1954
Invested by residents of all countries: Total Percentage in	7,614	7,092	12,469
Portfolio investments	64	58	42
Direct investments	32	38	54
Invested by residents of the United States: Total	1 660	4 000	0. 600
Percentage in	4,660	4,990	9,622
Portfolio investments	55	51	. 37
Direct investments	43	46	60

Source: Dominion Bureau of Statistics, Canada's International Investment Position, 1926-54

(Ottawa, 1956), pages 74 f. "Portfolio" investments are the sum of "Government and municipal bonds" and "Other portfolio investments."

"Direct" investments are defined as those "controlled in the country of ownership."

TABLE 3 Sources of Increase in Total Direct Investment BY NONRESIDENTS IN CANADA, 1946-55 (In millions of dollars)

Years	Total Annual Increase			Column 3 as percentage of Column 1		
1946	113	40	73	65		
1947	160	61	99	62		
1948	284	71	213	75		
1949	316	94	222	70		
1950	389	222	167	43 *		
1951	545	309	236	43		
1952	700	346	354	51		
1953	783	426	357	46		
1954	692	392	300	43		
1955	1.000	410	590	59		

Sources: Column 1-Calculated from Dominion Bureau of Statistics, Canada's International Investment Position, 1926-54 (Ottawa, 1956), page 74; and Dominion Bureau of Statistics, The Canadian Balance of International Payments, 1955 (Ottawa: Queen's Printer, 1956), page 42. Data for 1955 are preliminary.

Column 2—Dominion Bureau of Statistics, ibid., page 34.

TABLE 4 BALANCE-OF-INTERNATIONAL-PAYMENTS CREDITS AND DEBITS ARISING FROM THE MAIN TYPES OF CAPITAL MOVEMENT INTO CANADA AT VARIOUS DATES (In millions of dollars)

	Direct		Canadian rity Issues	Net Trade in Outstanding	
Dates	Investments Total 1 2		Net (Less Retirements)	Canadian Securities*	
Average of four years 1927–30.  Average of four years 1934–37.  Average of four years 1946–49.  Average of five years 1951–55.  1950.  1951.  1952.  1953.  1954.  1955.	-54 66	301 106 142 312 210 411 316 335 331 166	146 110 149 151 74 227 227 189 128 18	-61 16 48 - 8 329 38 -94 -31 63 -17	

<sup>\*</sup> The averages in column 4 for 1927-30 and for 1934-37 include an unreported trade in foreign securities as well. The heavy inflow cf 1950 took place mainly in the third quarter when there was speculation on a probable rise in the official value of the Canadian dollar from 90.9 cents in terms of the United States Jollar. On October 1, 1950, the maintenance of an official rate of exchange in Canada was ended.

Sources: Dominion Bureau of Statistics: The Canadian Balance of International Payments, 1926 to 1948 (Ottawa: King's Printer, 1949), page 163. Dominion Bureau of Statistics: The Canadian Balance of International Payments, 1955, and International Investment Position (Ottawa: Queen's Printer, 1956), page 34.



TABLE 5

Ownership of Capital Employed in Canadian Industries, 1953

	Item Num- ber	Manu- facturing	Mining and Smelting 2	Steam Rail- ways 3	Other Util- ities 4	Mer- chan- dising 5	Total, Five Groups 6
Percentage of total capital invested owned by residents of the United States In 1930 In 1953	1 2	33 38	34 52	21 16	30 15	*	24 25
Estimated percentage change in book value of capital employed 1948–1953  Total capital Nonresident owned.	3 4	55 70	133 235	15 —5	95 61	*	61 62
Investment in 1953 (in billions of dollars): Canadian resident owned United States resident owned	5 6	4.9 3.4	1.1	2.5 0.6	4.0 0.7	4.7	17.2
Ratio of United States owned to Canadian capital	7	0.69	1.18	0.24	0.18	0.09	0.37

\* Not available.

SOURCE: Dominion Bureau of Statistics, Canada's International Investment Position, 1926-1954 (Ottawa, 1956), pages 31, 32, 34.

ing classification, petroleum shows United States ownership of 56 per cent of the capital employed and control of an even larger proportion, 68 per cent (Table 6). In all Canadian manufacturing, United States ownership is 35 per cent and control 39 per cent. In our largest single manufacturing industry, pulp and paper, the ownership and control percentages rise to 42 per cent. In the chemical and electrical apparatus industries the percentages are yet higher and in the rubber and automobile industries United States ownership exceeds 75 per cent of the total capital employed (Table 6).

The statistics of our international investment position thus show up clearly the trends in capital movements which have attracted public attention in Canada. Whereas we formerly borrowed in London we now borrow in New York. Though we still borrow large sums by selling bonds abroad on our initiative, the old-rashioned method is being elbowed aside by a new one, direct investment, in which the initiative is taken by the lender, not the borrower. Moreover, his possession of Canadian assets carries control of business enterprises as well as ownership of their bonds or shares. So far has this process gone already that

		TABLE 6			
OWNERSHIP AND	CONTROL OF	SELECTED	Canadian	INDUSTRIES,	1953

Industry	Estimated Total Investment	CAPITAL I	tage of Employed ed in	PERCENTAGE OF CAPITAL EMPLOYED CONTROLLED IN	
-	(in millions of dollars)	Canada	United States	Canada	United States
Petroleum. Other mining. Other manufacturing. Automobiles and parts. Rubber. Electrical apparatus. Chemicals. Pulp and paper. Total of above industries.	8,129 280 130 386 572	41 41 56 23 25 35 39 48 52	56 50 35 76 75 59 46 42 41	30 45 53 5 8 28 28 45 48	68 53 39 n.a. n.a. 62 54 42 46

Source: Dominion Bureau of Statistics, Canada's International Investment Position, 1926-

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The individual industries named under "Other manufacturing" are arranged in order of the percentage of capital employed owned in the United States. Only industries in which this percentage is over 40 are listed here. The percentage of capital controlled in the United States is not separately given by DBS for the automobile and rubber industries.

control of almost one-half (46 per cent, Table 6) the capital employed in Canadian mining and manufacturing is exercised in the United States. Surely there is ample reason for the continued examination by Canadians of the implications of these trends in their international investment position.

In turning to some concluding comments I should say at once that no crisis in Canadian-American economic relations impends because of the discussion here being surveyed. It may become louder during the national election campaign of the next six months. Thereafter, however, it will subside notably, if it does not die out altogether. This will not be because the Canadian people do not need to think further about these questions but rather because they are prosperous. There is a pretty general conviction that Canadians have been most prosperous when capital flowed into the country freely; that it is proper that imported capital should be used to increase our export producing power; and that the present, when our mineral wealth is being so strikingly revealed, is no time to grow lukewarm in our welcome to American capital and enterprise. In some quarters, indeed, there is even a nervous apprehension that the inflow of capital may slacken and bring the current boom to an end and that we may not be able later on to sell in world markets the exports necessary to pay interest and principal on our foreign borrowings in addition to paying for an expanding level of imports. Others discount such doubts about our economic future and complacently assure their fellow-Canadians that the growth of

foreign investments in Canada is but a passing phase—that, as the history of the United States suggests, Canadian control will shortly be restored by buying the foreign investors out.

Impressive reasons can be advanced for optimism as to the soundness of the bases of the Canadian economy. Doubts might well be in order were the sale of our future exports dependent upon further tariff reductions abroad or the early achievement of nondiscriminatory international trade and stable rates of exchange. Tariff cuts have gone so far in a number of countries that further cuts will be strongly resisted. Full convertibility of the main world currencies seems less likely to come soon than it did some time back. Nevertheless, Canada is surely in a favored position as a producer of industrial raw materials, in a world where population grows rapidly and countries push their industrialization. As a supplier of minerals, the richness of our deposits and the cheapness of hydroelectric power by which they may be developed should set at rest any major worries about the future sale of a growing volume of exports.

Nor need we be concerned about future supplies of capital from foreign investors. Canadian securities stand high in New York and future sales of bonds there should not be difficult in the amounts we are likely to offer. Direct investments by American corporations in Canadian mining and petroleum enterprises will probably grow rapidly. The pressures which drive American businessmen to move into Canada are strong in this field and their advantages over purely Canadian enterprises sometimes considerable. They usually bring skill and experience acquired in similar operations elsewhere. Because of the financial strength and the variety of operations of the parent corporation the risks of a Canadian branch operation can be more readily borne. As experience in the development of our new iron ore deposits suggests, the power of the American corporation to assure future markets in the United States may be essential to the raising of the necessary finance. In general manufacturing, into which most direct investment goes (Table  $\epsilon$ ), the development of supplies for the United States market is a main motive, as for example, in the pulp and paper and chemical industries. In industries such as automobiles, rubber goods, and electrical apparatus, the rapidly growing Canadian market for both consumer and capital goods is the attraction. Competition between giant producers in the American market sometimes is continued in Canada, further expanding direct investments. Thus in moving into Canada, corporations from the United States are following a longstanding habit of exploiting the resources and markets of new areas as the population of the continent grows.

The fact that an international boundary is passed in this process

of expansion naturally concerns the American corporation very little. The relative ease of movement of men, money, and goods across the Canadian boundary makes it one of the few remaining specimens of conditions which were common in the nineteenth century. Discrimination in Canada against capital and enterprise from abroad is so remote a possibility that it may be neglected. Is there, in fact, any foreign country in which the materials needed by American economy can be produced which is so convenient and attractive as an outlet for the investment funds which are generated in such huge volume in the United States? Indeed the probability is not that we shall fail to find in the United States the capital and enterprise we could conveniently use to further the type and pace of national development which would he hest for us but rather that the mammoth economic forces now being directed from the United States to the northern part of the North American continent will overwhelm us and rob us of the very possibility of creating in Canada a relatively independent economic life.

The tendency of many Canadians not to give such a possibility much thought is due, in part, to a common assumption that it is but a passing phase in our development; that, like the United States, Canada will one day become a well-balanced, highly industralized economy very much less dependent on foreign trade than it is today and one in which foreign ownership and control of capital will be unimportant. The Canadian situation is different enough from that of the United States. however, to make the American example a poor guide to our own future on either of these counts. While the United States has important export regions, exports have probably contributed relatively less to the national income of the United States than they have, and seem likely to continue to do, in Canada. In the United States a rising standard of living has rested more and more on great regional diversity of resources, climate, and products and a mounting interregional trade. Our climate and the specialized character of our natural products will long retard, if not quite prevent, such a development in Canada.

Nor is the prospect of buying out the foreign investor so bright in our case as it was for the United States in the nineteenth century. It is true that on balance Canadians may repurchase some of their securities through the over-the-border securities trade. Future bond refunding issues may not need to be so large as the issues they replace. But direct investments are a different matter. American controlled enterprises in Canada issue few securities available to the Canadian investors; even should this be changed somewhat, getting control of Canadian subsidiaries of foreign companies through the purchase of outstanding securities is likely to be impossible in most cases. American corporations who make direct investments in Canada are interested not



only in an outlet for their capital but also in applying their skills as businessmen in a part of North America where the long-run profit aspects of such combinations of capital and enterprise are as good or better than they are elsewhere. The chances are, therefore, that American corporations are in Canada to stay, that they will grow at least as fast as the Canadian companies with whom they compete, and that they will continue to have a considerable impact upon our economic life.

Two important consequences are selected for discussion here: one in the balance of international payments and the other in the implementation of national economic policy. Had our economic growth been financed by Canadian controlled companies some of the foreign capital put into Canadian industry would have gone into industrial bonds and the rest into minority holdings of stock. Direct investment by an American or other nonresident corporation usually involves no funded debt, however. The consequent shift from interest payments to dividend payments in the balance of payments is a decided gain. Rigid debits arising out of contractual obligations of Canadian companies are replaced by the more flexible debits arising between the Canadian subsidiary and its parent corporation. Against that advantage there must be set, however, the disadvantage that the debits due by a Canadian company which borrows abroad by issuing its bonds would likely be eliminated in time, leaving only the dividend payments on that part of the original investment which went into shares of stock. Since, for reasons noted above, direct investments are not likely to be reduced but rather to grow with the country, the depit in the balance of payments will remain and increase in size, also.

This conclusion is strengthened by the fact that direct investments by American corporations are most evident in the largest Canadian corporations and that larger corporations are growing more rapidly than smaller ones. As their size is usually due, also, to mechanization they pay out less in wages per dollar of value added in manufacture than smaller companies do.<sup>6</sup> Profits and capital charges are relatively large. In the mineral industries profits may be very large if rich deposits are found. When very large profits are made by American subsidiaries engaged in the production of raw products for export, a larger part than usual of the value of the exports must be used up in transferring the profits abroad. In such cases large exports make a relatively small contribution to meeting other debits in the balance of payments. They carry their own debits with them, so to speak. The same is true even if the product is sold in Canada; the larger debits incurred by the transfer of the profits must be financed by other credits.

<sup>&</sup>lt;sup>6</sup>C. D. Blyth and E. B. Carty, "Non-Resident Cwaership of Canadian Industry," Canadian Journal of Economics and Political Science, November, 1956, pp. 452 f.

Should profits be reinvested, the balance of payments is eased; the profits debit is then, in effect, offset by a credit from a new capital inflow. When investment spending is high, as at present, the balance-of-payments burden is therefore relatively low; later it will increase. From such considerations one may conclude that the balance-of-payments debits arising from foreign investments in Canadian industry will continue longer and will probably be higher because of the extent to which such investments are controlled as well as owned outside the country.

The disadvantages in the field of national economic policy which may flow from a large foreign control of Canadian enterprises arise from differences in the circumstances surrounding the making of major business decisions by executives in Canadian companies and in Canadian subsidiaries of foreign corporations. Recent public discussion, as was noted above, stresses the possible subordination of the production, pricing, and marketing decisions of the American subsidiary to the over-all plans and profit of the parent corporation of which it may be but a small part. Many of the top executives of these subsidiaries have risen through foreign branches of the corporation, stay in Canada but a few years and have their ears tuned inevitably to currents of opinion outside the country. Their responsiveness to Canadian opinion and its expression in national economic policy may therefore be slower and less complete than that of the executives of Canadian companies. This may even be true when the executives of the American branch are native Canadians who must seek their further promotion in the parent concern.

This point may be illustrated from the field of monetary policy. In an attack upon inflationary pressures, the monetary authorities in a large country must rely mainly upon the well-known weapons of the central bank. In a small country, where business and government leaders may be personally acquainted, quick appreciation by the business community of the objectives of monetary policy and early adjustment of their own decisions in its light may well be an important supplement to the direct impact of the central bank's operations. Such voluntary co-operation is of great importance in Canada where the pressures which credit restrictions impose may be avoided by borrowing in the United States. Not only do the executives of Canadian branches of United States corporations have this alternative open to them in an unusual degree; they may also be less convinced than their counterparts in Canadian controlled companies of the appropriateness of the policies being followed.

The importance of such considerations is hard to assess. No evidence is available, so far as I am aware, of serious disadvantages in the

execution of Canadian economic policy having arisen from such influences. Differences in the degree of independence in business decisions probably exist even between American branch plants in Canada. They may reflect differences in the practice of the parent corporation or in the size of the Canadian branch rather than the fact that it is located outside the United States.

To estimate the balance of gains and costs to the Canadian economy of the large nonresident control of our business enterprises is as yet impossible. The evidence is scanty and the most important results may lie in the future. As the gains are well known, attention is given, in this paper, mainly to the possible costs. Canadian consideration of these costs is important because they bear directly on two important policy problems: the maintenance of a reasonable rate of economic growth and the creation of an economy well suited to developing the full productive capacities of the Canadian people. So vast is the frontier to be exploited in our northland that the aid of capital and enterprise from abroad is obviously a net advantage there. Whether the same can be said for a very large nonresident controlled segment in the ordinary industrial life of the country is another matter. The attention Canadians are now giving to the influence of the growing volume of direct investment from the United States is well placed. Economic relations between the United States and Canada would perhaps run more smoothly were some attention to be paid to these matters in the United States as well.

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#### DISCUSSION

REUBEN E. SLESINGER: The main concern of Professor Lewis is directed in his illuminating discussion of international competition at what are the basic factors that determine the course of nations that find their exports rising and falling with the passage of time. As his test example, he stresses the experiences of England and her declining share of export trade and of the United States, Germany, and Japan and their increasing importance in world markets.

In Great Britain, as well as in India, which also is cited by Lewis, the problem is complicated by the fact that these countries have a shortage of arable land, as related to population. If these countries are to sustain themselves—and this means an increasing importation of food and raw materials—then it becomes essential for them to increase their export of manufactured products, as the best means for paying for the import balances. The writer indicates that to do this, an increased rate of growth—at least 3 per cent annually—is required. This, in view of the record of the past, appears unusually optimistic. When comparisons are made to the rate of growth experiences during recent decades, little suggests that England would be able to demonstrate such a rate—one almost twice its record for the last generation or two. Moreover, in the United States, where conditions have been more favorable for growth, such a rate is barely likely.

Statistical data presented by Professor Lewis, ranging from 1883 to 1954, indicate that four ccuntries have been of particular importance by way of world markets in manufactured products. These have been England, the United States, Germany, and Japan. Five significant elements are listed as probably accounting for the relative shares and percentages accounted for by each of these countries. It is of interest to note his examples of how price competition has not always been the item on which the direction of trade has turned and that intensive salesmanship efforts, especially on the part of the Germans, have borne tremendous fruit.

One wonders whether there might be any connection, in this respect, between the nationalistic or internationalistic policies pursued by the respective countries and the artificial stimulants to exports offered by Germany and Japan. It is interesting to observe, from the table presented by Professor Lewis, that during the period 1929-37, at which time the nationalistic policies of Germany and Japan were reaching their neights, the percentage of world trade in manufactures accounted for by Germany advanced from 18.4 to 19.7 and of Japan from 3.4 to 6.4. At the same time, the respective percentages for the United Kingdom declined from 20.4 to 19.7 and of the United States from 18.2 to 17.3. It is true that these percentage changes are slight and that the variations might have little to do with the nationalistic programs of Japan and Germany, but the possibility remains.

Following another line of development, Professor Lewis examines some of the experiences of the British steel industry. While Germany was increasing its production of steel. England continued to emphasize textile exports. At the same time, the United States assumed an increasing importance in the world steel market. In seeking an explanation for these changes, the writer points to the natural resources of the United States, the geographical location of Germany which made her nearer most of the European markets, and the technological leadership which these two countries gradually took away from England. A question may be raised at this time; namely, whether there was not a general slackening of the pace of technological advance in Great Britain, intensified both by the relative complacency of industry that accompanies a dominant position and the opposition of trade-unions to the extension of technological advances. The writer does indicate that the British effort in manufactured products was suited more for the sale of cotton and railway materials, and hence was in a less favorable position when the nature of export markets underwent change. Since the cotton trade was profitable, investing-seeking capital flowed to this activity rather than to some other type that offered more risk, less assurance of a profitable return, and greater and more intense world-wide competition.

Here again there is no direct mention, but an implication might be induced that the entrepreneur in England was satisfied to earn a reasonable rate of return and not disturb existing relationships, believing falsely, as future facts proved, that his position would continue for long and not be disturbed by more inventive enterprisers elsewhere.

Professor Lewis' paper forms a good object lesson to nations that are in a position of importance in international markets. He indicates pitfalls that might confront them that could reduce their position as well as indicating techniques and policies that might be adopted to further their present dominance as well as to increase their relative importance. In the compass of his development, Professor Lewis does not indicate all the facets, however, that enter into the realm of international competition, particularly the changes in the nature of world trade that follow the game of international rivalries and power politics with its many ramifications of controlled trade, currency nonconvertibilty, satellite country bilateral agreements, and the now many familiar techniques of economic warfare.

Professor Fetter's main thesis is concerned with the question of whether European convertibility may be accomplished independently of England and whether the time is ripe now for a group of nations in Europe to form a "convertibility club" independent of Great Britzin.

Throughout his discussion Professor Fetter minimizes the role of England as a leader today in international exchange circles. To be sure, this leadership has been more than shaky, but the prestige of the British pound still carries considerable weight. One may wonder what success a convertibility club that excludes England would have in view of the nations that still cling to the sterling dominance.

The writer makes a significant point at the outset when he calls attention to the extreme differences between the decade following World War I and the ten years after the second World War in the field of international exchange. It was only a short time after the first war that most nations re-

turned to a type of convertibility; yet today, some ten years after the second war, convertibility is a rare situation. As he indicates, further, in the decade following World War I, the debate was over "not whether a country could convert but at what rate it should convert."

Professor Fetter lists two essentials that were determining in the decade of the twenties in the debate over convertibility: the ability of a country to hold its cost-price structure in line with that of other countries and the availability of a supply of gold and exchange sufficient to cover any short-run disequilibrium in the balance of payments. Today, one must consider a host of other factors, political considerations being not the least of these.

From an international exchange point of view the problem is complicated further today by the necessity of a country having balances not only with all of those countries with which it practices convertibility but also with all of the countries with which it trades but with whose currency convertibility is not the case. The writer makes a significant point of the fact that it is not only a dollar shortage that may delay or bar convertibility but also an exchange shortage of other currencies.

Some blame for the failure to achieve more convertibility in recent years also is placed at the indifferent attitude that prevails in many countries, marked by a desire to achieve a certain standard of living through the mistaken belief that inflated prices resulting from manipulations of the monetary system will bring this about.

It is interesting to note the emphasis placed by the writer on the possibilities of bringing about convertibility outside of England. Moreover, he decries the concept of a "European" convertibility problem. He would prefer to treat this problem on an individual country basis and has more hope for the restoration of convertibility through the efforts of countries such as Switzerland, Belgium, Holland, and even Germany. This, it should be emphasized, is a refreshing view and one that cannot be passed over lightly. Besides, prior to World War I, international trade did view each country more on an individual basis. He asks: Why not now?

The writer then goes on to reduce in importance the emphasis placed on the dollar shortage in the years immediately following World War II as the basic core for thwarting efforts at convertibility. True, most countries were confronted with the problem of reconstructing their domestic economies and of rebuilding their foreign trade relationships. But the dollar imbalance was not only not the only cause of this difficulty, but it might not have been even the most important one. Some of the reasoning stems from the emphasis on a common European convertibility front and the centering of the problem around England.

Several approaches are indicated to the problem of European convertibility: the possibility of England's returning to a convertibility status, that of other European countries converting after the lead of England, and that of other European countries, or a group of them, converting independently of England. The first possibility is dismissed as not very realistic at the present time. The prestige of England is recognized with reference to the second possibility. The author feels that a number of other European countries would follow the British lead. However, his conclusion is that the best chance

is for the third alternative: convertibility independently of the British action. With this observation, I cannot agree fully. It would seem that the United States stands in a better position to influence the policies of England in the financial arena, and if convertibilty is to come, it must include Great Britain as its leader in Europe.

Professor Knox's paper presents a careful analysis of the problem faced by many nations that find themselves with heavy foreign investments made during their economic growth and then the sudden realization that these interests may become disturbing as the nation reaches a stage of more maturity and stability.

The writer outlines the role that the United States has played in the development and "exploitation" of Canadian resources and points to the flow of capital from the United States north of the border. This situation has brought with it a great dependence of Canada on a single country, whose domestic prosperity or depression may then exert a tremendous influence on the welfare of Canada.

This issue has stirred considerable debate in Canda and particularly over the issue that the continued dominance of Canadian corporate life by United States firms may place Canada in the position of a vassal state of the U.S.A. Interest in this matter has been increasing in recent years by a feeling in Canada that that nation presently is capable of developing its own resources and that it would be better for Canada to develop its own industries. Fear is expressed that a Canadian branch of a United States firm is treated merely as one foreign office and that the welfare of the parent corporation and not the Canadian subsidiary comes first. This, to be sure, carries considerable merit in argument.

It is my feeling, however, that the Canadian situation—without implying specifically that Canada is an underdeveloped country—is similar to that of many underdeveloped countries that beg for foreign investments to help in developing their balanced economic growth and then want to dispose of these when the industries become prosperous. The writer brings up another point—one concerning the development of a top managerial profession in Canada. He points out that most of the higher executives of the United States firms operating in Canada either come from south of the border and thereby are not truly interested in the economic development of Canada or are hired among the Canadian nationals who must then sacrifice their national loyalties for the benefit of the parent corporation. Both alternatives are viewed as holding little promise for the development of a vibrant executive group in Canada.

If such is the case—and a well-informed, ready managerial group is not present—it would seem that considerable danger by way of mismanagement and financial disaster might occur were the Canadians to take over most of the corporations. The writer indicates that Canada has experienced in the last forty years a decided shift in the nature of foreign capital flowing into the country. Prior to 1914, the source was mainly British. Since that time it has changed to United States. In fact, by the present time, some three-fourths of the foreign capital flowing into Canada comes from this source.

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Not only has the source of foreign capital changed, but so also has its

nature. Currently, the greater percentage of United States capital that flows into Canada is in the nature of direct investment, meaning that the firm is owned by Americans who erect the necessary capital facilities in Canada. This is in contrast with portfolio capital advances in which Canadians construct the facilities and residents from the United States purchase securities in these concerns.

The dangers to Canada of direct investments are indicated, such as constituting a heavy drain on the balance of payments and the continuation of a hierarchy of industrial firms whose allegiance is to a foreign country. A point that is overlooked, it seems to me, is the fact that much of this argument is premised on the continuation of a high degree of prosperity in Canada. Should there be recession or world-wide depression, it would appear that direct investments by foreign corporations would shift a considerable burden of the depression to the foreigners and allow the Canadians the benefit of escaping many of the costs of such a decline, such as the necessity of making good on many fixed charges and costs that would be present.

The writer does indicate, to be sure, that there are many in Canada who are not motivated by a fear of capital inflow from the United States. Moreover, he also points out that the public stir over the matter has diminished somewhat and may decline still further after certain elections take place. I would have to agree with this group for it seems evident that the continued balanced economic growth of Canada rests heavily on the inflow of capital from the United States and it does not seem likely that this will come in the form of portfolio rather than direct investments.

H. Austin Peck: I should like to deal briefly with a topic which, I believe, has direct bearing on the questions posed by Professor Fetter and which also has relevance for the issues raised by Professor Lewis. This topic is the proposal that a so-called "common market" should be created among a number of countries in Western Europe. The idea that there ought to be a relatively large area in Europe within which there are no trade restrictions is not new. What distinguishes the present proposals is the support which they appear to command among highly placed persons and the amount of highlevel discussion which is being devoted to them. Not only are the proposals being considered on the Continent, where they originated, but they are also being discussed seriously in Great Britain, which has frequently held itself aloof from plans aimed at European economic integration.

The present proposals envisage the creation of a customs union among the six countries which are now associated in the European Coal and Steel Community. These are France, Italy, Western Germany, and the Benelux countries. Customs duties among these countries would be eliminated gradually over a period of twelve, or possibly fifteen, years. At the same time that tariffs on trade amongst the six countries are being removed, their tariff positions toward third countries are to be adjusted so that they will have a common external tariff. Thus at the end of twelve (or, at most, fifteen) years there would be a large, tariff-free area in Europe presenting a common tariff to the rest of the world. Tariff removal in itself means little, of course, if

other restrictions are used in place of tariffs. This has been recognized by the planners of the common market, and provisions to deal with quotas have also been proposed. Quotas on trade amongst the members of the customs union would gradually be increased in size until they became so large that they would presumably be inoperative.

Although these undertakings would be far-reaching in themselves, the present proposals go much farther. Free movement of labor and capital within the common market is also envisaged. National discriminations against foreign workers are to be removed gradually, as are restrictions on capital movements.

It is recognized, of course, that changes of the magnitude proposed would require substantial adjustments in the economies of the nations involved. The provision of a relatively lengthy transition period is designed to permit these adjustments to be made gradually. Numerous safeguard clauses are also included which would permit certain national actions to be taken in the interests of easing the adjustment process. On the more positive side, it is proposed that all member states contribute to a "readaptation" fund, which would provide financial assistance to firms and workers endeavoring to adjust to changes brought about by the inauguration of the common market. It is also proposed that another fund, called an "investment" fund, be established with an authorized capital of about one billion dollars. Its resources would be used to assist in plant reconversions, in the development of new types of economic activity, and for loans to less developed regions within the customs union.

What are some of the implications of the proposals just outlined, and what are the chances that the proposed common market, or some variation of it, will actually come into being? I assume that, on economic grounds, most of us would agree that definite advantages would arise from the creation of a large area in Europe within which reasonably free movement of goods and factors is permitted. Under these circumstances production of different goods could be concentrated in areas where costs are lowest, economies of large-scale operation could be achieved, and more effective use of Europe's resources could be made. Productivity should increase, incomes should rise, and economic growth should be stimulated. Since the growth process has a tendency to be cumulative, the potential benefits for Europe are substantial.

While it seems clear that the aggregate income of the entire customs union would increase, how would the gains be distributed among individual nations? Only if each nation can feel reasonably sure that benefits will accrue to it will the common market have a chance of being accepted. It is assumed that if the common market were instituted, production would tend to be concentrated in areas where costs are lowest. Might not some of the shifts, which would then take place, work to the detriment of some areas, at least in the short run? In particular, I am thinking here of the less developed areas. Many of the economies of large-scale production, which would benefit more industrially advanced areas, would have little meaning for the types of production carried on in less developed regions. What, then, should be the attitude toward such regions? Should they be promised special consideration,

in the form of subsidies or capital assistance, as the price of their agreement to formation of the common market? Should they be permitted to use restrictive devices, as exceptions to the general rules? Any of these steps would require some compromise of basic principles, but compromises will undoubtedly be necessary in the interests of securing agreement. The promise that some of the gains in the productivity of the union as a whole will trickle down to all areas is unlikely to be sufficient to induce less favored regions that they should agree to formation of the common market.

Differing national economic conditions and differing governmental policies seem certain to cause difficulties for the formation of the common market. Policies aimed at maintaining the level of domestic employment provide an example. Such policies have been among the most important pursued by most states in recent years, and lack of harmonization of these policies among members of a union could occasion serious difficulties. If some members pursued the full employment goal less diligently than did others, frictions would be sure to arise. But even if we assumed that all nations pursued the full employment goal with equal vigor, the possibility of conflict would not be removed. Different approaches to the same goal could easily result in distortions within the union. One nation might rely heavily on monetary policy, for example, while another placed major emphasis on fiscal measures. Differences in interest rates and tax structures between the two nations might then arise, which would presumably lead to capital flows and perhaps to migrations of business firms and persons. And these movements might not be in the interests of increased efficiency in the use of resources. Other types of national policies could also be the causes of distorting influences, but time does not permit discussion of them. If freedom of factor and goods movements within a union is assumed, it seems that a reasonably high degree of uniformity among member states in certain domestic policies is essential. Whether nations, which have developed domestic programs over a period of years, will be willing to alter these programs to the necessary extent is debatable. The experience of recent years suggests that most nations want to have considerable freedom to pursue domestic programs of their own choosing, and this predilection is not favorable for the formation of a common market such as that proposed. If only goods movements were involved, without freedom for factor movements, the compulsion for harmonizing domestic policies would be less strong. It may be easier, therefore, to achieve agreement on the removal of barriers to trade than on the removal of restrictions on factor movements.

It also seems certain that the payments aspects of the proposed common market will play a large role in its possible future. Formation of a union would seem to require quite different concepts of balance-of-payments adjustments than those to which the countries of Western Europe have become accustomed. Since the use of controls would presumably be given up in respect to trade and payments between members of the union, these devices could not be used as means of adjusting to balance-of-payments disequilibria. If it is assumed that rates of exchange are to be kept fixed, the burden of adjustment to disequilibria would fall on domestic economies, unless

one can postulate the existence of a large and continuing fund for use in such situations. Would member states be willing to make the necessary domestic adjustments, especially if they involved sizable doses of deflation? Or should we assume floating rates of exchange among members of the union? While such an arrangement would lessen some of the pressures on domestic economies, I have reservations about the workability of a system of floating rates in a common market area. Given the importance of international trade to the countries of Western Europe, the payments issue will have to be resolved if the proposed union is to come into existence.

The present official British attitude toward the common market proposals is significant, especially in view of earlier expressions of disapproval. The British government is now proposing that Britain form an association with the common market, if the latter comes into existence. A free-trade area, consisting of the common market. Great Britain, and other interested nations, is viewed as the form which this association would take. This arrangement would not require Britain to maintain a common external tariff with the other members and so would permit the maintenance of preferences for Commonwealth countries, at least in relation to other nonmembers of the free-trade area. The British proposal also contains the stipulation that agricultural products not be included under the general rules of the free-trade area. This exception is designed to safeguard the interests of Commonwealth nations as well as to protect British agriculture. I think we should all realize that this proposal represents an important shift in British thinking. Fears of the consequences for Britain if the common market were formed without Eritish participation were undoubtedly influential in causing this shift. British goods would be at a marked disadvantage in many Continental countries when compared with the products of members of the common market. Another influence has been the growing feeling that imperial preference is less valuable than it once was. Increasing orientation toward the growing European market is apparently regarded as of greater value. The idea of becoming associated with the common market has powerful support in Britain. The Labour Party has indicated that it agrees in principle with the government's decision, and both the Federation of British Industries and the Trades Union Congress have given their support. Britain's attitude may also perhaps increase the willingness of France to accept the common market idea. French fears that Germany would dominate the union may be allayed somewhat if Britain is associated in the scheme.

No one can know, of course, whether the work now being done will result in the eventual signing of a treaty establishing a common market or whether this scheme will founder on the rocks of nationalism, as have some other plans for European unity. The obstacles in the path of agreement are formidable, but there is also considerable strength behind the drive for establishing a union. If the common market is established, it will be an event of major importance for the world economy and one whose effects will be far-reaching.

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## SOVIET ECONOMIC DEVELOPMENTS

## SOME OBSERVATIONS ON SOVIET INDUSTRIAL GROWTH\*

By G. WARREN NUTTER University of Virginia

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Imagine an economy born in violence and grown up in turmoil, where the only two spurts of growth stand on either side of a destructive war; where the economy's character has been radically transformed within less than thirty years; where industrial structure and directions of growth have been dictated by the aim of maximizing state power; where prices have borne a haphazard relation to costs; and where a government with flexible standards of candor has exercised rigid control over the trickle of information it has allowed to the outside world. You are asked to determine how fast that economy has been growing and to compare it in performance with other powerful economies of the world.

Your problem is unique: not one of the major pitfalls of economic measurement is missing; any economic aggregate or index number that might be constructed is subject to virtually all the serious faults one can think of. The economy has undergone a metamorphosis that cannot be meaningfully summarized in a measure of over-all growth; the directions of growth have shifted swiftly and violently from time to time; no moderately long and undisturbed period of development has been experienced; and, finally, only a small biased sample of economic data, of doubtful meaning and validity, is available for study.

Under the best of conditions it is a mistake to rely too heavily on broad indexes of industrial production in making comparisons of growth between countries. In addition to revealing nothing about the structural side of growth, such indexes are by no means independent of it. That is to say, the numerical value of a production index may be greatly influenced by the course of expansion followed

\*I am grateful to Israel Borenstein, Solomon Fabricant, Adam Kaufman, Geoffrey Moore, and Leo Wolman for helpful comments on earlier drafts of this paper. Special recognition is also due to the competent staff of research workers responsible for collecting and organizing the underlying data, but it cannot be given in a brief footnote.

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by an economy, even though growth in some significant meanings of economic capacity is neither greater nor smaller than it would have been had an alternative course been followed. In any event, what applies to the best of conditions applies with magnified force to the Soviet Union. If sound and relevant judgments are to be made on Soviet economic growth, the evidence must be summarized in a variety of ways, only one of which is the broad production index.

I want to suggest some of these ways, and to explore one in some detail. Despite the ambitious title originally assigned to this paper, my discussion will have to be limited to industrial growth, since that is the area I have been working in. The data that will be presented have been drawn from a study under way at the National Bureau of Economic Research; they are, of course, preliminary and subject to revision. In any event, a full explanation of what lies behind them will be published when the study is completed. It must be said here that all Soviet data are based ultimately on information published in the Soviet Union; and, though efforts have been made to remedy the most obvious deficiencies, no scholar can have a clear conscience in working with Soviet data as if they were fully reliable. A few additional remarks will be made on this crucial point at the conclusion of this paper.

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Suppose we raise the following question How successful has the Soviet Union been in matching the industrial achievements of the United States? One way to approach an answer is to make an industry-by-industry comparison of Soviet and American growth in physical output, in each case confining the comparison to periods in which American and Soviet industries were of equivalent size. A comparison

¹Any study of individual industries involves the many familiar problems of defining each industry in a relevant way and of finding comparable industrial categories for different economies. The problem of definition has been "solved" in part by the availability of Soviet data. In general, the industries—it is perhaps more accurate to say "commodities"—chosen for study are the most narrowly defined categories for which Soviet data on physical output can be found covering the entire Soviet period. Relying on narrow concepts of industries makes for obvious difficulties in interpreting differences in growth as between economies with differing endowments of resources. Thus the petroleum industry has shown a much more rapid development in the United States than in the Soviet Union over comparable periods, while the coal industry has not. The comparatively slower growth of coal in the United States is essentially the result of comparatively better opportunities in the petroleum industry, not of any relatively depressive factors applicable to the "fuel industry" as a whole. It would therefore be useful to examine comparative developments in the fuel industry as well as in its components and similarly in the case of other industrial groups. Analysis of this sort is planned for the study under way at the National Bureau.

It should also be pointed out that there are gross deficiencies in the definitions of industries as given in Soviet statistical materials. Often little is known about a Soviet industry beyond a broadly descriptive title—as "copper," "paper," "canned food," and so on. Under these circumstances, the choice of American counterparts is necessarily somewhat arbitrary, though we have done our best to choose what seemed to be the most similar industries.

of this sort, while containing flaws of its own, makes allowance for the important fact that most individual industries tend to grow more slowly percentagewise as they get older and larger—a phenomenon characteristic of the Soviet Union as well as the United States. An industry-by-industry comparison of percentage growth rates for concurrent periods does not make such an allowance and may produce misleading conclusions to the extent that mature American industries are being compared in growth with youthful Soviet counterparts. A simple and direct method of making the desired kind of comparison is to examine the lag of Soviet output behind American output and what has happened to the lag over time.

This is done in Tables 1 and 2, where the Soviet lag in both total and per capita output is listed for 37 industries as of three bench mark years: 1913, 1937, and 1955. Although the sample of industries has been dictated by availability of data on physical output, it does cover a fair number of so-called "basic" industrial materials and consumer "staples." Cyclical fluctuations have been smoothed out of the American output series—essentially through nine-year moving averages—so that comparisons would not be made with unusual temporary peaks in American output. On the other hand, Soviet series were not similarly smoothed because their fluctuations are fundamentally different in nature from our own cycles, and also because serious technical problems arise as a result of marked discontinuities in the series. Similarly, no adjustment has been made for gains in Soviet output resulting from territorial expansion after World War II; i.e., such gains are included in the data. Therefore, on these scores, the lags are computed favorably for the Soviet Union, at least as a general rule.

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The meaning of these lags and of their changes over time is best shown through an example. In 1913, the Russian production of steel ingots within the interwar territory of the Soviet Union was roughly equal to production achieved in the United States around 1892, or 21 years earlier. Hence the lag in 1913 was 21 years. The lag had risen to 32 years in 1937, and fell somewhat from that point to a level of 29 years in 1955. Thus Soviet production of steel ingots was 8 years further behind American production in 1955 than it had been in 1913, which is to say that it has taken the Soviet Union 42 years (1913-55) to accomplish what the United States had done in 34 (1892-1926). On a per capita basis, the lag increased from 30 years in 1913 to 40 in 1937, and to 49 in 1955. Production per capita was 19 years further behind in 1955 than it had been in 1913; the same expansion in per capita output had taken place in the United States in 23 years (1883-1906), instead of in 42.

When we consider the entire group of industries, we note that in the

TABLE 1 LAG OF THE SOVIET UNION BEHIND THE UNITED STATES IN OUTPUT, BENCH MARK DATES, 37 INDUSTRIES\*

	Lag (Number of years)			Increase or Decrease (-) in Lag		
	1913	<b>1937</b> :	1955	1913–37	1937–55	1913-55
Iron ore. Pig iron. Steel ingots. Rolled steel. Primary blister copper Lead. Zinc. Electric power. Coal. Coke. Crude petroleum. Natural gas. Soda ash. Mineral fertilizer. Synthetic dyes. Caustic soda. Paper. Sawn wood. Cement. Window glass. Rails. Railroad passenger cars. Railroad freight cars. Butter. Vegetable oils. Sausages. Fish catch. Soap.	28 30 21 27 33 94 46 13 45 31 14 32 22 43+ 2 17 44 61 19 13 42 21 33 21 54 -11 34 -11 34 -11 -13 -14 -14 -15 -16 -17 -17 -17 -17 -17 -17 -17 -17	36 36 32 35 50 60 43 21 49 36 26 51 31 27 15 25 46 73 33 0 57 46 51 38 26 36 4	15 39 29 29 51 52 46 16 47 30 34 52 24 14 12 24 54 52 32 54 53 69 35 29 35 29 51 52 52 53 54 54 54 55 56 56 56 57 57 57 57 57 57 57 57 57 57 57 57 57	8 6 11 8 17 -34 -3 8 4 5 12 19 9 -16+ 13 8 2 12 14 -13 15 218 17 21 17 21 15 17 17 17 18 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18	-21 -3 -6 -18 -5 -6 -18 -5 -6 -18 -7 -13 -13 -11 -3 -7 -13 -18 -11 -3 -12 -13 -13 -14 -15 -16 -17 -18 -17 -18 -18 -18 -18 -18 -18 -18 -18 -18 -18	-13 9 8 2 18 -42 0 3 2 -12 20 20 2 -29+ 10 13 -13+ 12 32 36 14 24 † †
Sugar. Canned food. Beer. Cigarettes. Boots and shoes. Rubber footwear. Cotton fabrics. Silk and synthetic fabrics. Woolen and worsted fabrics. Median**	6 43+ 42 -1 23+ 14+ 28 23 43+ 28	17 45 66 11 44 19 44 44 67+ 36	27 45 73 14 44 48 25 69 35	11 24 12 16 21 †	10 0 7 3 0 -19+ 4 -19	21 † 31 15 † -14+ 20 2 † 9

<sup>\*</sup> U.S. output taken as centered nine-year moving average, with minor modifications. Soviet output covers interwar territory of the Soviet Union for 1913 and 1937, and postwar territory for 1955. A Soviet lead is indicated by a negative sign in columns 1-3. Where U.S. data do not go back far enough to give the full lag, the calculable lag is followed by a plus sign.

† Insufficient data to indicate whether the lag increased or decreased.

‡ Soviet output exceeds U.S. output up to the present.

case of total output the median lag-that lag exceeded by half the industries and fallen short of by the other half—was 28 years in 1913, 36 in 1937, and 35 in 1955. The median lag in per capita output was 56

Decrease in lag of unknown magnitude.

\* Medians in the last three columns are calculated from data in those columns; i.e., they are median increases in lag, not increases in the median lags given in the first three columns. The median increases in lag are derived from data for the following numbers of industries: 1913-37, 32; 1937-55, 36; 1913-55, 31.

LAG OF THE SOVIET UNION BEHIND THE UNITED STATES IN PER CAPITA OUTPUT, BENCH MARK DATES, 37 INDUSTRIES\*

	Lag (Number of years)			Increase or Decrease (-) in Lag		
	1913	1937	1955	1913–37	1937–55	1913–55
Iron ore	53+ 48	52 52	54 56	† 4	2 4	. † 8
Steel ingots	30	40	49	10	9	19
Rolled steel	24+	48+	52	†	†	t
Primary blister copper	53	58	66	5	8	13
Lead	105+	109	76	† 4	-33	-29+
Zinc	53	57	59		2	6
Electric power	14	26	25	12	-1	11
Coal	66	69	69	3	0	3
Coke	33+	49	56	† 7	7	_†
Crude petroleum	27	34	41	7	7	14
Natural gas	32+	52	70	Ţ	18	<u>†</u>
Soda ash	27	43	45	16	2	18
Mineral fertilizer	43+	40	30	-3+	-10	-13+
Synthetic dyes	14+	20	22	_†	2	16
Caustic soda	19	40	35	21	-5	16
Paper	54+	67	71	. †	4	
Sawn wood	114+	102	111	-12+	9	-3+
Cement	30	38	47	8	.9	17
Window glass	34+	-2	15	-36+	17	-19+
Rails	46十	70	85	Ţ	15 •	1.1
Railroad passenger cars	27	57	69	30	12	42
Railroad freight cars	33+	57+	75+	_ †	† 8	
Butter	30	50	58	20	8	28 28
Vegetable oils	16	40.	44	24	4	28
Sausages	24+	48+	61	Ţ	, Ī .	
Fish catch	33+	57+	19	Ţ	-38+	-14+
Soap	34+	58+	76+	1	l I	Ţ
Sugar	12	32	47	20	15	35
Canned food	43+	62	60	1	-2	Ī
Beer	43+	67+	85+	Ţ		, Ť
Cigarettes	0	15	19	15	[ 4 ]	19
Boots and shoes	23+	47+	65+	I	I	I
Rubber footwear	14+	38+	56+	I I	I	I
Cotton fabrics	43+	67+	85+	Ţ	Ţ	Ĭ
Silk and synthetic fabrics	34	58	42	24	-16	8
Woolen and worsted fabrics	43+	67+	85÷	J.T	Ţ.	13
Median‡	Š	§	56	10	4	13

§ Insufficient data to calculate median.

years in 1955; equally precise calculations cannot be made for other bench mark years in the case of per capita lags, because many lags are so long they cannot be measured—American statistics on output do not go back far enough to show output per capita as small as in the Soviet Union. Changes in per capita lags can, however, be measured for 21 industries over the Soviet era as a whole, and the median of these is an increase of 13 years. Moreover, 16 of the 21 industries show an increase

For notes \* and †, see Table 1. ‡ See note \*\* in Table 1. The median increases in lag are derived from data for the following numbers of industries: 1913-37, 19; 1937-55, 28; 1913-55, 21.

in lag. In the case of total output as distinct from per capita output, the median increase in lag is 9 years, and 24 of 31 industries show an increase. Per capita lags have generally increased over recent years (1937-55) as well as over the Soviet period as a whole, but this is not true for lags in total output: in that case more industries show a decrease in lag over recent years than show an increase, the count being 20 industries to 14.2

What may we then conclude? This is obviously not the place for an exhaustive analysis, but let me indicate, with appropriate qualifications, some inferences that might be drawn. In the first place, Soviet industry seems still to be roughly three and a half decades behind us in levels of output and about five and a half decades in levels of per capita output. This is, of course, a generalization about average performance rather crudely defined; in some areas the Soviet Union is much closer to us historically, in others much further behind, Second, and with the same qualification, the development of Soviet industry is roughly equivalent to what took place in this country in the four decades bracketing the turn of this century—in per capita terms, in an even earlier period ending around the turn of the century. Third, over the Soviet era as a whole, Soviet industries have generally lost historical ground to their American counterparts—the lags have generally increased—in terms of both total and per capita output. That is, growth from the same level of output, total or per capita, has been slower In Soviet than in American industries. This tendency is, incidentally, not unique to the Soviet era; the same thing was happening over the last four decades of the Czarist period. Fourth, while Soviet industries

<sup>2</sup> The summary statistics given here reflect, of course, conditions in industries where growth has been deliberately retarded by Soviet authorities in order to promote growth in other industries. The difference in performance between the neglected and favored sectors may be indicated in part by computing summary statistics separately for industries producing consumer goods, on the one hand, and for all other industries, on the other hand. For instance, if the last 14 items in Tables 1 and 2 are taken as consumer goods, and the first 23 items as all other goods, the following results are obtained:

	Median Lag (Number of years)			Median Increase or Decrease (-) in Lags*			
İ	1913	1937	1955	1913-37	1937–55	1913-55	
Total output Consumer goods All other goods	26 30	<b>4</b> 1 36	36 34	16 8	0 -3	18 7	
Per capita output Consumer goods All other goods	†	† 52	60 36	20 6	4 4	24 11	

<sup>\*</sup> Derived from the following numbers of industries for 1913-37, 1937-55, and 1913-55 respectively: total output, consumer goods—8, 12, and 3; per capita output, consumer goods—5, 7, and 6; total output, all other goods—23 in each case; per capita output, all other goods—14, 21, and 15.

† Insufficient data to calculate median lag.

have tended in recent years to gain ground in terms of total output, they have continued to lose ground in terms of per capita output.

To anticipate questions that must have arisen in the minds of many, let me say right away that this has been a recital of the raw historical record for the Soviet era as a whole, which cannot serve in itself as an adequate guide to future performance. Bad years of growth—e.g., 1913-28—have been indiscriminately mixed with good, and the conditions producing those bad years may never recur with the same intensity. Such analysis has the same faults as focusing solely on the best years of growth; here, too, there were many peculiarities not likely to persist over the long term. A proper appraisal of underlying trends requires that attention be paid to both short and long periods. But we can attend to only one thing at a time, and the essential purpose of this brief paper is to bring the picture of growth trends into focus by looking at long-range performance. Needless to say, the study now under way at the National Bureau will give much more detailed attention to the problems mentioned here.

While digressing on qualifications, it is worth pointing out that Soviet products seem to be generally inferior in quality to their American counterparts, even to those produced many years earlier. Moreover, quality seems to have deteriorated in many industries over at least parts of the Soviet era. The inferiority and deterioration are most marked for consumer goods, but they also hold for many industrial materials. It has not been possible to make allowance for these factors, and hence the lags and their changes are biased in favor of the Soviet Union. This matter is apart from the question of how reliable Soviet data are on the quantitative side, quality ignored. On that score, it hardly seems likely that Soviet authorities have practiced the art of understatement in heralding their achievements.

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Let us now return to the main theme and examine more closely the suggestion that industrial development in the Soviet era, unadjusted for population, is similar to, though slower than, our own during the period 1880-1920.<sup>3</sup> This inference has been drawn from an analysis that was not confined to a single period of growth in the United States. On the contrary, about half the comparisons between Soviet and American industries involved American periods ending earlier than 1920 and the other half involved periods ending later. Hence there has been some picking and choosing among different periods in American industrial

<sup>&</sup>lt;sup>8</sup> It would be interesting to go into the question of comparable periods of industrial development on a per capita basis, but this would take us back to a period in American history where data on production are too meager to support a careful study.

history in order to obtain levels of American output equal to those of Soviet output, and the picture might not look the same if attention were confined to 1880-1920 alone.

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Suppose we compute growth rates for that period for as many American industries as possible and compare them with Soviet rates for 1913-55 (see Table 3). We see that in 22 out of 31 industries growth was significantly more rapid in the United States than it has been in the Soviet Union. This does not on the face of it contradict the conclusion drawn from study of lags.

Of course, even if it were true that the growth rate for every industry were higher in the United States than in the Soviet Union, it would still be possible that an over-all weighted index of growth would be lower. This could come about if the Soviet rates for some industries were higher than the American rates for others, and if there were a sufficiently strong positive correlation between Soviet rates, on the one hand, and the ratios of Soviet to American weights, on the other. In fact, the Soviet rates are not even all lower industry by industry, and therefore the only relevant question is the correlation. The only way to find an answer is to make weighted indexes, and this should certainly be done. It is worth pointing out, however, that there is a very strong negative correlation between Soviet growth rates and the industry-byindustry ratios of Soviet to American output, the latter taken for the year 1913 (see Table 3). It would therefore seem unlikely that there would be a strong positive correlation between Soviet growth rates and any sensible relative weights one might choose.

Let us then accept tentatively the conclusion that industrial growth over the Soviet era has proceeded at a pace not any higher than that for the United States from 1880 through 192C. What else might this imply? The pertinent issue here is whether American industrial growth has tended to slow down over the long term. If there has in fact been such a retardation, it has not left an unambiguous imprint in the statistical record. To be sure, the Great Depression of the thirties brought about a sharp fall in the growth rate for the years bracketing it, but recent trends would suggest that this was a cyclical, not a secular, phenomenon. In any event, few economists who have studied American industrial growth find adequate evidence of a significant and steady retardation in the rate of industrial growth as conventionally measured. If such over-all retardation has not taken place and if Soviet industry has not grown faster than our own grew from 1880 through 1920, it would then seem reasonable to suppose that it has not grown faster than ours over a more recent period-say, the last forty years, or the Soviet era itself.

This conjecture is puzzling, indeed, in the light of what one observes

TABLE 3

GROWTH RATES COMPARED IN THE SOVIET UNION AND UNITED STATES, 31 INDUSTRIES

(Per cent)

	* .						
	Avera	ge Annua:	Ratio of Soviet				
	Soviet Union		United	United States		to U.S. Output	
	1880–1913†	1913–55	1880-1920	1913-55	1913	1955	
Iron ore	7.1 7.3	5.0 5.0	5.8 5.9	1.4 1.9	16 14	71 52	
Steel ingots		5.8	9.1	2.7	13	47	
Rolled steel Primary blister copper	7.3	5.5 6.0	6.6 7.6	2.7 0.8	15 5	48 42	
LeadZinc	0.9 4.6	13.7 11.1	4.9 7.8	1.2 2.0	0.3	38 22	
Electric power	7.5	11.2 6.4	34.1	7.6 -0.3	7 -	30 92	
Coal		5.6	6.9	1.2	11	67	
Crude petroleum Natural gas	10.4	5.0 13.9	8.1 15.5	5.6 6.8	27 0.2	22	
Soda ash	17.0	5.4 11.6	10.3	4.4 5.6	20 3	33 34	
PaperSawn wood		5.5 3.9	5.8 1.5	$\frac{2.9}{-0.2}$	6 14	15	
Cement		6.6	10.3	3.0	11	47	
Window glass Railroad passenger cars		3.5 1.2	3.8 3.8	$\begin{array}{c} 2.0 \\ -3.5 \end{array}$	60 38	106 271	
Railroad freight cars		3.1 3.6	5.3 7.6	-2.0 1.6	8 •	63 72	
Vegetable oils Fish catch		$\frac{2.2}{2.4}$	8.9 0.7	3.1 2.0	77 108	43 129	
Soap		3.5	4.0	-0.8	15	73	
Sugar Canned food	5.6	2.0 8.8	8.1 6.2	1.7 4.5	73 2	83 <b>-</b> 16	
Beer Cigarettes		$\frac{2.0}{5.6}$	1.6 12.1	$\frac{0.9}{8.0}$	11 125	17 50	
Cotton fabrics	4.7	2.0 5.7	3.6 7.5	1.4	35 18	46 21	
Woolen and worsted fabrics		2.1	1.3	-0.3	30	81	

<sup>\*</sup> Geometric mean of the ratio of output for terminal years, minus one. U.S. output taken wherever possible as centered nine-year moving average.

† For blank spaces, adequate data not found. Output covers Czarist territory excluding

when he compares concurrent Soviet and American growth rates for individual industries. The Soviet rates are almost all higher by considerable amount (see Table 3). The key to the puzzle may well lie in the fact that this is, as already mentioned, essentially a comparison of young Soviet industries with mature American ones; and, although there is no easily discernible retardation in over-all American industrial growth, there certainly is as a general rule—in the Soviet Union as well as the United States—unmistakable retardation in growth of individual industries as they get older and larger (see Table 3 for some evidence). If I may use an imperfect analogy, each son will ultimately catch up to his father in height, and brothers of different age will differ less and less in height as they get older. A whole population, on the

other hand, may maintain a quite stable average height or rate of increase in average height. As far as industrial growth is concerned, the point is that attention must be given to both new and old industries, to ones being born and ones dying, and in every case to the weights it seems proper to attach.

Let me illustrate these issues by returning to the specific example of steel ingots. For the period 1913-55, Soviet output grew at an annual rate of 5.8 per cent (based on data for terminal years), while American output grew at only 2.7 per cent. As a result, Soviet output rose from about an eighth of American output at the beginning of the period to almost a half at the end. The significance of this development from the point of view of industrial growth is, however, not as clear as it might seem; for, as we noted earlier, it was about 30 years ago when American output reached half its present level, but it was only about 20 years before 1913 when it reached an eighth of its level at that time. That is to say, it took only 20 years for American output to multiply eight times up to its level of 1913, but it took almost 30 years for it to double up to its level of 1955. In terms of annual rates, American output grew at 9.1 per cent from 1880 through 1920, but at only 2.7 per cent from 1913 through 1955. It is quite possible, in view of the great efforts being put into steel production in the Soviet Union, that retardation in growth will not be as marked there as it has been in the United States. But the history of the Soviet steel industry certainly implies that there will be some retardation. The following comparisons of Soviet annual growth rates for the output of steel ingots are informative: 1880-1913, 8.7 per cent, compared with 1913-55, 5.8 per cent; 1928-37, 17.2 per cent, compared with 1948-55, 13.6 per cent.

I do not wish to argue that there is no significance in the tendency for certain Soviet industries to approach their American counterparts more and more closely in size. Quite to the contrary, it is easy to think of several important problems for which this is a very important consideration, and any study of Soviet industrial growth would be seriously incomplete without explicitly revealing this widespread phenomenon. The only point being made is that this type of analysis is not adequate for assessing "general" industrial development. The concept of industrial growth must somehow take account of expansion in breadth as well as length. Paying attention solely to a fixed list of industrial products—especially to a list supplied by Soviet authorities—is a deficient approach, even if some method is used to weight products by importance. This point may be underscored by observing

<sup>\*</sup>The essential point to keep in mind here is the austere nature of Soviet industry in contrast to American industry. American growth has taken place in large part through proliferation of commodities designed for similar functions, through improvements in quality, and through addition of new services, both directly and as embodied in improved commodities. Soviet growth has taken place mainly through expanded output of standard

that the decline of some industries in the United States—as coal, soap, and railway equipment—is in a real sense a sign of progress: the supplanting of worse by better means of doing the job. Are, then, gains by the Soviet Union on the United States in output of coal, for instance, to be viewed as indicating more rapid industrial advance?

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Even in a discussion as incomplete as this one admittedly has been, it would be improper to conclude without emphasizing once again that we have been looking, from a few restricted points of view, at the record of industrial achievement posted by the Soviet Union over the entire period of its existence. The years under review include the two world wars, a violent revolution, and a severe civil war—altogether some eleven years of turbulence, a fourth of the period. They also cover experience under both a planned and an "unplanned" economy, and these in turn have had disturbances of a severity that may not be encountered again. There are obviously questions raised about how trends are to be interpreted over times such as these.

At a minimum, account must be taken of the best years of growth, which come down essentially to the periods 1928-37 and 1948-55. These short spurts of growth have, of course, been much more rapid than growth over the Soviet period as a whole. As already mentioned, there are good reasons for doubting that the performance in these short periods can be sustained over the long haul. A number of unique circumstances that favored rapid expansion are not likely to be encountered again—including, for instance, the absorption of a vast idle labor force and the sudden inheritance of Western technology. However this might be, any judgment of Soviet industrial development should give all due weight to performance under the best of conditions.<sup>5</sup>

products. This is, of course, an oversimplification, but it serves well enough here to point up a significant difference. As a few specific examples of the austere path of Soviet development, one might note the persistently limited varieties of textiles, the retention of basic tractor models for two to three decades, and the slow progress made in packaging consumer products. When one leaves the realm of "industry," the contrast is sharpened. Nothing remotely similar to the expansion of service trades in this country has taken place in the Soviet Union. It is perhaps well to stress that these remarks are directed to the question of "general" industrial development, not to performance in special areas. In particular, nothing that has been said is inconsistent with Soviet successes in developing new and increasingly deadly weapons of war, and in producing them in large quantity.

Output

It is difficult to understand the argument that only the recent years of growth are of any interest; i.e., that long-range performance is irrelevant for assessing growth trends. However, in view of comments on this paper by Professor Grossman, it may be well to indicate the general behavior of lags with 1928 as a bench mark year. For total output, the median lag was 28 years in 1913, 45 years in 1928, and 34 years in 1955; the median change in lags was an increase of 15 years for 1913-28 (based on data for 31 industries) and a decrease of 9 years for 1928-55 (based on data for 32 industries). For per capita output, the median change in lags was an increase of 15 years for 1913-28 (based on data for 17 industries) and an increase of 0 years for 1928-55 (based on data for 24 industries). That is to say, of the 24 industries for which changes in per capita lags can be computed over the period 1928-55, half showed an increase and half a decrease.

Some hint of what may come—and how it may differ from what has been—is contained in Table 4, which gives the Soviet lags that will exist in 1960 if the current Five-Year Plan is fulfilled. A quick comparison with Tables 1 and 2 will show that the Russians expect to gain ground generally over these five years, but the ground-gaining would not be sufficient in some industries to prevent their still being further behind us than in 1913. It remains to be seen to what extent the plans will be

TABLE 4 LAG OF THE SOVIET UNION BEHIND THE UNITED STATES IN TOTAL AND PER CAPITA OUTPUT AS IMPLIED BY THE SOVIET PLAN FOR 1960, 24 INDUSTRIES\*

	"Planned" Lag for 1960 (Number of years)		
	Total Output	Per Capita Output	
Iron ore Pig iron Steel ingots Rolled steel Electric power Coal Crude petroleum Soda ash Caustic soda Paper Sawn wood Cement Window glass Railroad passenger cars Railroad freight cars Butter Vegetable oils Fish catch Sugar Canned food Boots and shoes Cotton fabrics Silk and synthetic fabrics Woolen and worsted fabrics	17 16 13 † 26 22 22 52 52 62 † † 54 72 31 15 † 40 18 46	51 55 47 47 20 63 39 33 30 69 115 10 † 66 80+ 49 37 † 31 56 70+ 87 28 90+	
Median	. 20	48	

<sup>\*</sup> See same note, Table 1, Soviet population in 1960 taken as 218 million. † Soviet output, if achieved, will exceed U.S. output through 1955.

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met. Experience suggests the most likely failures will be in the realm of consumer goods, particularly those based on agriculture. There is no reason to suppose goals will not be reached in areas of high priority; for, unless we have been massively deceived, they apparently have been reached in the past. If the goal for steel ingots is reached, the lag in total output will have fallen from 29 years in 1955 to 17 years in 1960, which is 4 years less than the lag in 1913; in something of a contrast, the lag in per capita output—as based on the population projected ahead by Soviet authorities—will have fallen only from 49 years to 47 years, which still exceeds the lag in 1913 by 17 years.

If I may now end up where I started, I should like to call attention once again to the heavy cloud of doubt and suspicion that must hang over any study involving Soviet data. The recent de-Stalinizing period has brought with it hopeful signs that Russian statistics may some day move toward the standards of completeness and frankness met by Western statistics, but it has also brought blistering internal indictments of wholesale deception practiced in the past. Thus we may read the following about industrial development in Poland, which may have some application to developments in the Soviet Union:

It is necessary to stop the race for purely quantitative indices which are attained thanks to low quality and to high own costs. This brings about purely fictitious results, the usage of raw materials and of human labour for production of goods which do not produce the intended economic, and often even the intended technical effects (e.g., agricultural machinery improper to any use after a few weeks).

These words come from an economist who four years ago was outdone by no one in the tribute he paid to Stalin and the Soviet system. If the ebb and flow of political fortune can bring such a complete reversal in the position taken by Oskar Lange, we may only speculate on what the truth really is in the Soviet world.

Oskar Lange, "For a New Economic Program," translated from the Polish by J. Vanek and reproduced for private circulation by the Center for International Studies, Massachusetts Institute of Technology, October, 1956. The article originally appeared in Zycie Gospodarcze (Warsaw) for July 16, 1956. The quotation is taken from p. 5 of the translation.

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See, e.g., Oskar Lange, "The Economic Laws of Socialist Society in the Light of Joseph Stalin's Last Work," *International Economic Papers*, No. 4 (London and New York: Macmillan, 1954), pp. 145-180, a translation of an article appearing originally in Polish in *Nauka Polska*, No. 1 (Warsaw, 1953).

# ORGANIZATION AND TECHNOLOGY IN SOVIET METALWORKING: SOME CONDITIONING FACTORS\*

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Soviet economic development, particularly in the field of heavy industry, has been remarkably rapid since the beginning of the first Five-Year Plan. The objective of this paper is to examine from a single and limited point of view the effects of Soviet social-economic institutions upon this development process. Our concern is with the impact of these institutions upon the types of work-organization and technology employed in Soviet industry, so as to isolate a few of both the positive and negative effects of the social-economic system upon the technology evolved in the development process. We shall take as a case study a somewhat heterogeneous grouping of industries which have consistently stood near the center of the Soviet development effort and priority system: the group of metal-fabricating or engineering industries.

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First, it should be pointed out that while the Soviet metal-fabricating industries borrowed extensively from Western technology, there was no effort to simply copy production facilities existing elsewhere, nor indeed any genuine possibility of so doing. It was necessary for Soviet administrators to make decisions as to what to borrow, where to make modifications, and how to produce Western-type products by methods different from those used in any specific Western factory.

This may be illustrated by the construction of the Gorky Automobile Plant (GAZ), which was built at the beginning of the thirties on the model of the Ford River-Rouge plant and with great technical assistance from the Ford Company. Both in Russia and abroad, it was asserted that the Gorky plant was simply a copy of the Ford one. However, a detailed article by several of the Russian engineers involved in building the plant brings out major differences between it and the Ford model.<sup>1</sup>

<sup>1</sup>L. Mertts, N. Gekker, V. Sokolinskii, G. Gissin, and L. Tsukerman, "'Gaz' i 'Ford,'"

Planovoe Khoziaistvo, No. 7, 1932.

<sup>\*</sup>The assistance of the John Simon Guggenheim Memorial Foundation, the Social Science Research Council, and the Harvard University Russian Research Center is gratefully acknowledged.

In many areas of production, Ford methods were not the most modern by American standards. In these instances (for example, in forging), the GAZ engineers radically modified the design of various shops and auxiliary activities.

The Ford plant was organized on the principle of heavy subcontracting of parts. The GAZ engineers rejected this principle on the basis that appropriate subcontracting plants did not exist; thus, in most aspects, GAZ was far more vertically integrated than was the Ford plant. On the other hand, GAZ was built without the open-hearth furnaces or rolling mill found at the Ford plant. Doubtless this was due to the great scarcity of steelmaking equipment in the Soviet Union and the desire of Soviet administrators to funnel all new equipment of this type into the major steel plants then being built and reconstructed.

Lastly, some of the Ford equipment was rejected because Russian factor-proportions differed from American. In machining, there was rejection of what was called "too specialized equipment"; the explicit motivation was that of saving capital, presumably at the recognized price of increasing labor expenditures per unit of product. In casting, there was rejection of sand-slingers for the molding of cylinder blocks. The reasons given were that sand-slingers require frequent repair and that they cause greater wear and tear on patterns used in molding than do alternative types of equipment. Since patternmaking is a highly skilled trade and since, in addition, the maintenance of equipment was a major Soviet problem, the rejection of sand-slingers was clearly designed both to conserve extremely scarce skilled labor and to avoid future bottlenecks due to idle equipment.

The Gorky plant was a new construction, and thus to a considerable extent represented a tabula rasa for its Soviet designers. But this was by no means always the case in the expansion of metalworking capacity. For such expansion has, to a considerable extent, been accomplished through the reconstruction and expansion of existing plants rather than through the building of new ones. Thus, during the first Five-Year Plan period, 51 per cent of the capacity brought into operation in this industry was composed of expanded and reconstructed rather than new plants.<sup>2</sup> In these cases of expansion, the existing plant structures and equipment set limitations as to what was feasible in the way of reorganization and re-equipment.

The United States and Great Britain, along with Germany, were the main sources of technological ideas and assistance from abroad. But two major problems were involved in utilizing foreign technology. One was the difference between the Anglo-American measurement system

<sup>&</sup>lt;sup>2</sup> G. Kniaz'kov, "Kapital'noe stroitel'stvo v tiazheloi promyshlennosti v pervoi piatiletke," *Planovoe Khoziaistvo*, No. 1-2, 1933, pp. 55-56.

and the metric system used in Russia; English and American designs and tooling had to be readapted rather than just translated into the metric system. Where this was not done—for example, in the autotractor industry during the first years of Soviet planning—it entailed great complications for industries producing such inputs as rolled metals and measuring tools. These complications arose from the need to simultaneously carry on production both in the metric and in the British measurement systems. A second problem grew out of the fact that designs and tolerances are based on the availability of specified materials such as types of steel. With the Russian steel industry at first being unable to provide steels within tight limits of dimensions and compositions and with the Russian desire for substituting other materials for those nonferrous metals which were particularly scarce, extensive redesign was inevitable.

Production methods are also extremely difficult to transplant from abroad because they are to a considerable extent embodied in "shop know-how" rather than in blueprints and job-instruction cards. Thus, even when foreign companies gave the Russians full access to their plant drawings and archives, a lengthy learning process in the shops of the newly built Russian plants could not be avoided.

Finally, there was little possibility for imitating various American production methods until a wide agglomeration of problems had first been solved. This applied particularly to the use of continuous-flow production. In this organizational scheme, production equipment is combined in such a way as to permit a subassembly or even an entire product to be produced by a single group of equipment, with the work moving fairly continuously from one machine to another as in a stream. Despite widespread Russian interest in continuous-flow methods, they were scarcely introduced into metalworking—other than in final assembly—during the prewar period. Resulting differences in production organization from American models inevitably translated themselves into differences in equipment.<sup>3</sup>

II

With this background, illustrating the limitations to the borrowing of Western technology and work-organization, let us turn to two broad problems which arose out of the Soviet planning system and institutional framework.

The first of these is the failure to develop subcontracting and plant specialization on a broad scale. Instead of depending on specialized factories for tooling, repair work, parts such as fasteners, etc., Soviet

<sup>&</sup>lt;sup>3</sup> Cf. Granick, "Economic Development and Productivity Analysis: The Case of Soviet Metalworking," *Quarterly Journal of Economics*, May, 1957, for a development of this point.

metalworking plants typically are vertically integrated to a high degree. This vertical integration causes lot-sizes of production to be relatively small, which, in turn, sharply affects the technology employed. For example, a Soviet study of the production of fasteners used by twenty-six metalworking plants indicated that specialized production of these fasteners could best be done by cold upsetting instead of by turning on turret lathes, as was appropriate when each plant produced its own fastener requirements. This recommended shift, the Soviet author estimated, would not only have reduced labor requirements but would also have reduced the capital investment tied up in the production of these fasteners from ten million rubles to two million.<sup>4</sup>

The failure to develop subcontracting is striking on two counts. One is the high cost of such failure. In 1955, Bulganin cited major cases where production costs were two to four times what they would have been if production were specialized and so advantage were taken of economies of scale. The second count is that this stake has been recognized by Soviet leaders continuously over the period of the Five-Year Plans. At the beginning of the first Plan, it was held that Russian metalworking should be developed along the lines of specialization and extended subcontracting. Since then, the theme has been continually repeated and demands have been made and plans laid for the reorganization of the metalworking industry in this direction. Yet, despite Soviet unanimity as to the error of the ways of the industry over a quarter of a century, precious little has been done about it. How can this be explained?

A first partial explanation lies in the concentration of Soviet economic growth primarily within the sector of heavy industry. This concentration, as Soviet writers themselves insist, is very much a product of the institutional and ideological structure of the Soviet economy. It led in the prewar period to the rapid creation of entirely new metal-working industries. If these were to have been organized along the lines of subcontracting, then it would have been necessary to build specialized plants to produce parts for the main plants which were being constructed. To a slight extent this was done, as in the case of the supplying of ball bearings to the auto industry, even in the early thirties, by the newly built Kaganovich Ball-Bearing Plant. But, by and large, the Russians followed the easier path of building integrated factories in new industries and thus avoiding the difficulties implicit in the simultaneous creation of both principal and subcontracting plants.

This has been a fairly typical pattern in the development of new industry in backward countries. But the stumbling block has usually

<sup>&</sup>lt;sup>4</sup>K. I. Klimenko, Puti povysheniia proizvoditel<sup>9</sup>nosti truda v mashinostroenii SSSR (Moscow, 1950), p. 131.

been that of integrating simultaneous new construction of plants owned and controlled by different private interests. One might have speculated that, under a highly centralized system of planning, the avoidance of this obstacle would have resulted in the building of a number of smaller specialized plants instead of a few integrated large ones—particularly since, in the period of construction, this was frequently acknowledged to be the preferred pattern. That the simpler, integrated-plant pattern was in fact chosen shows something as to the limitations of Soviet planning—at least in the early period of Soviet development.

A second explanation for the relative absence of subcontracting is the existence of a tight seller's market throughout the period of Soviet planning. By a seller's market, I mean a condition where firms have been virtually sure of selling all of their production, irrespective of its quality, product-mix, or delivery dates. Industrial plants have been unable to depend on the reliability of procurement of raw materials and parts from suppliers. This situation has resulted from the fact that Soviet planning in heavy industry has consistently been based on assumptions of maximum production, founded on worknorms and norms of equipment usage better than had yet been actually realized. Purchaser firms receive requisition slips for supplies based on these optimistic assumptions as to future production by the supplying firms. Under these conditions, it has been inevitable that a high percentage of firms (31 to 40 per cent of the total in the economy between 1951 and 1954) should underfulfill their production plans and thus should be unable to carry out all their contracts for supplying goods to purchasing plants. In addition, the pressure to "fulfill plan," as defined by a single composite index figure for output, has frequently led firms to produce a different product-mix than had been planned for them. This presents no serious sales problem for the producing firm, since it operates in a tight seller's market, but it further complicates the operations of plants dependent for their supplies on these outside producers.

In view of this institutional "fact of life" of the Soviet economy, arising from the formulation of national plans based on squeezing the maximum possible output from each factory, firms have striven for as much integration as possible with their sources of supply. (The Soviet firm typically consists of a single plant, or at best of a few plants physically located side by side. Thus vertical integration within a Soviet firm can be much more injurious to proper production techniques than integration within an American multiplant company.) Managements gain control over their supply problems by minimizing their dependence on others—regardless of the effects on their costs. The strength of the impetus for this movement towards plant autarchy may

<sup>&</sup>lt;sup>5</sup> Pravda, August 10, 1955. .

be judged from the fact that, during the first quarter of 1955, firms of heavy machine building supplied to other plants only 50 per cent of the steel castings called for by their sales schedules. (Bulganin in Pravda, July 17, 1955, page 3.)

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An example of the reaction of plant managements to the problems involved in subcontracting can be seen in the case of the Saratovskii Combine Plant, In 1932, this plant subcontracted out more of its work than did any other firm in the agricultural equipment industry. This was considered an important achievement along the desired lines of specialization; but from the production point of view, it was catastrophic. For the plant received only a fraction of the semifabs and parts for which it had contracted. As a result, the director of the plant wrote in May, 1932, that the management was searching for measures to free itself from dependence on its subcontractors. It was, for example, in the process of developing mass production of wheels within the plant and was setting about building a casting shop.6 The plant management was doing its best to reorganize the plant into an integrated production unit.

While consuming plants have objected to dependence on subcontracting because of its unreliability, producer plants have similarly tried to avoid the acceptance of subcontract work. Plants have resisted having their facilities used to produce castings or forgings for other firms or to machine parts for them. This resistance has had a threefold motivation.

On the one hand, higher planning authorities have typically defined plan fulfillment in such a fashion as to make subcontracting work count less towards the plan fulfillment of the firm than would independent output of some finished product. This awkwardness of the planning indices is exemplified by the case of a plant in 1953 which had idle casting and forging capacity but could not accept subcontracting orders because its wage fund was linked solely to its production of a designated type of output. Thus it could not legally pay wages for any work but this.7

Probably more important, however, has been the resistance to the type of uncertainty involved in entering into subcontracting work. Firms engaged in subcontracting have often found themselves at the mercy of higher authorities, who suddenly decide that the firms should perform a specific short-term subcontracting task. Such spot decisions, during the course of a planning year, can wreak havoc with all produc-

<sup>&</sup>lt;sup>6</sup> Dzh. Pepper et al., "Itogi pervoi piatiletki v oblasti spetsializatsii i kombinirovaniia mashinostroeniia," Planovoe Khoziaistvo, No. 3, 1932, pp. 121-123.

<sup>7</sup> N. Sachko, "O putiakh ispol'zovaniia vnutrennikh rezervov srednikh i nebol'shikh predpriiatii mashinostroeniia," Voprosy Ekonomiki, No. 8, 1953, p. 43.

tion schedules. Moreover, the plant may be compelled to take on work for which neither its equipment nor its production organization is designed (e.g., production of a small part in large lots by a plant geared to heavy work in tiny lot sizes), while its performance is judged on the basis of what its equipment should produce if properly loaded. No wonder that plant managements try to protect themselves by avoiding subcontract work of any type.

Finally, the avoidance of subcontract work means that a plant has free capacity which it may use to produce items which are low-priority by national standards but which it itself needs to meet its prime production targets. An arch example of this was metallurgical production by metalworking plants during the first Five-Year Plan period. This Five-Year Plan called for considerable production of rolled metal by a number of the metalworking plants but considered that these plants should specialize in the output of quality steels both for their own and for their neighbors' needs. Ordinary steel was to be supplied by the metallurgical industry proper. Yet the 1932 plan found metalworking plants producing not only a lower proportion of quality to ordinary steel than had originally been planned but even a lower ratio than that of the metallurgical industry proper. Why this reversal? Because those metalworking plants which were fortunate enough to have rolling mills attached to them oriented their production towards meeting all of their own needs-both for ordinary and quality steel-and away from selling quality steel to other metalworking plants. In view of the grave difficulties in procuring regular deliveries of any type of steel, such an orientation—even though away from high-priority and high-value product made perfect sense from the point of view of the producing plants. (Pepper et al., op. cit., page 124.)

Here, then, we have a variety of explanations for why specialization and subcontracting have never developed in Soviet metalworking. The underlying factor is the existence of a tight seller's market due to a tense planning system and constant pressure by higher authorities for maximum output from each plant. The result of this has been the development of an organizational structure of the industry—accompanied, inevitably, by a technological structure—which Soviet writers have consistently condemned as being in violation of proper structural principles of modern industry. One may well ask, although with no attempt to answer the question, whether Soviet pressure for maximum output may be self-defeating in that it has created organizational and technological distortions which have done more long-run damage to production than the good done by the pressure on management for production. Even if the Soviet policy of pressure should be judged to be on balance successful, certainly we must consider these distortions

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as a significant cost of the policy—and one which may be growing increasingly burdensome.

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A second long-range problem which seems to have arisen out of the Soviet institutional framework is the constant shortage—from 1928 to the present—in make-ready facilities within the metalworking industry. At all times, there have been complaints that casting and forging operations were the bottlenecks of the industry. These complaints continue today. In view of the tremendous growth in over-all capacity during this quarter of a century of planning, it is surprising that the same bottlenecks should continue to exist.

A first explanation for these continuing bottlenecks is that the hopes of central planners for subcontracting of forging and casting were continually frustrated. Basing their concept as to balance of operations (between make-ready facilities on the one hand and machining and assembly on the other) on the assumption of subcontracting and on the building of specialized casting and forging plants, they may have underallocated capital funds for the construction of casting and forging facilities within each integrated metalworking plant.

In this regard, it is most interesting that casting and forging should also be the least mechanized of the production processes. Since they are bottlenecks, we might well expect the opposite. Yet, within the institutional framework of Soviet industry, the relative absence of mechanization is quite explicable.

In the case of casting, the explanation would seem to lie in the resistance of firms to the production of castings intended for further fabrication in other plants. Given this resistance, plants which have large casting facilities do not load them heavily. Other plants, with only small casting requirements, are forced to have their own casting shops instead of purchasing castings. These shops must also be lightly loaded. Thus there can be a significant underutilization of casting facilities in many plants alongside of a severe shortage of castings in other firms. An example of the evidence for this underloading is the fact that, in 1933, casting on the average was on a one-shift basis while the average over-all number of shifts in all processes of metalworking was 1.44.8

With a low load factor in casting operations, mechanization is not economically warranted. Moreover, mechanization would further reduce the load factor, resulting not only in economic disadvantages but also in administrative problems, in that it would be increasingly diffi-

<sup>&</sup>lt;sup>8</sup> Calculated from TsUNKhU Gosplana SSSR, Sotsialisticheskoe stroitel'stvo SSSR: 1935 (Moscow, 1935), p. 69, and TsUNKhU, Trud v SSSR (Moscow, 1936), p. 155.

cult for plant managements to explain their low load factor to higher authorities. The only alternative would be for these firms to move into the production of castings for other plants which have inadequate casting capacity.

The same explanation applies to forging. Here, however, an additional factor has been the inability of plants to purchase dies. Since die-work is extremely delicate and difficult to organize in plants not specially geared to it, Soviet forging has been heavily based on power hammers—operating without the use of dies.

A second explanation for the continued bottleneck character of forging and casting would seem to lie in the difficulties faced in procuring a proper product-mix of rolled steels. These difficulties result partially from the tight seller's market, which causes metalworking firms to be happy to purchase any available product-mix of steels and permits metallurgical plants to produce and sell steels varying from the dimensions, tolerances, and chemical compositions for which they had contracted. They also result from the continued emphasis by higher authorities on volume production of steel, with relative disregard of the issue of producing a mix most appropriate to the needs of the metalworking industry.

The response to these difficulties in procuring an adequate steel-mix has been threefold. First, it has resulted in the need for more forging work than planned, due to the need for reducing larger dimension rolled steels than should have been supplied. (This also leads to a preference for hammer forging with its greater flexibility, as opposed to other types of forging processes which are more productive but also are less adaptable to the use of varying dimensions of steel as material inputs.) Secondly, it has resulted in the need for excess forging capacity in order to meet emergencies arising from receipt of a particularly poor steel-mix, and of excess casting facilities to permit substitution of castings for forged parts when pig iron for casting is available but steel for forging is not. Thirdly, it has led to a preference for casting over forging due to the fact that it is easier for a plant to obtain the relatively homogeneous material inputs needed for casting than the heterogeneous dimensions of steel required for forging. The force of this preference can be seen from the fact that, in 1937, pig iron intended for casting made up 19 per cent of total Soviet production of pig iron,9 while the comparable percentage in the United States for this period was about 8 per cent.

The above explanations indicate why greater forging and casting

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<sup>°</sup>S. Volikov, "Potreblenie i perevozki chernogo metalla po raionam SSSR," Planovoe Khoziaistvo, No. 11, 1938, p. 94.

capacity should be required in the Soviet metalworking industry than would be predicted either on the basis of comparisons with advanced Western economies or of purely technical considerations. Since Soviet planners do not operate on the basis of existing production functions but rather through the use of functions projected into the future on the assumption of constant improvements, it seems reasonable to think that they may have been consistently overoptimisitic in their expectations as to reduced need for forging and casting capacity per unit of machining capacity. This is particularly the case since they have here been faced primarily with institutional rather than technological obstacles, and it is easier to dismiss institutional obstacles as "subjective" and thus readily susceptible to elimination.

## IV

Up to this point, we have dealt with unfavorable effects of Soviet institutions upon the work-organization and technology employed in the metalworking industry. To balance this picture, let me indicate an important favorable effect. Unfortunately, the shortage of time prevents me from presenting the evidence for its existence.<sup>10</sup>

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This favorable effect of Soviet institutions is the utilization of factor proportions in Soviet metalworking which are far more appropriate to the relative scarcity of capital versus labor in the Soviet Union than are factor proportions which would have been obtained by utilizing advanced American technology. Soviet technology in this industry seems to the speaker to be best explained by the hypothesis that Soviet planners have acted as though they were primarily concerned in the past with keeping the capital/output ratio as low—or almost as low—as possible, wherever this could be done by substituting labor for capital. In other words, they seem to have come close to minimizing the capital/labor ratio on a given isoquant. This is particularly striking in auxiliary processes, such as materials handling and inspection, but also seems to be the case in production processes.

Such substitution of labor for capital is entirely rational when judged according to orthodox marginal analysis doctrine. The social cost of labor has, at least in the past, been quite low, while the marginal efficiency of capital has been high. Soviet planners, in deciding upon technologies to be employed, may quite rationally compare the social cost of labor with the marginal efficiency of capital. Although there is nothing in Soviet theorizing to indicate that this is what is done, an examination of the technology actually introduced suggests that, in fact, the metalworking industry has developed much along the lines to

<sup>20</sup> Cf. Granick, op. cit., for the evidence and development of the theme.

be expected if decisions were made on this basis. Obviously, this must have been accomplished through a process of capital rationing.

In this regard. Soviet industry seems to have an institutional advantage in the process of early and intermediate development over many currently underdeveloped countries. For in many currently underdeveloped countries, the private cost of labor to the individual entrepreneur is far above its social cost. This is so because manufacturing concerns are obliged to pay wages and social benefits to their employees considerably higher than the social cost of labor in these countries. On the other side of the coin, capital is often severely rationed in underdeveloped nations, and the pure rates of interest (abstracting from risk) paid by those firms which are actually in a position to develop large-scale manufacturing are far below what would be the freemarket pure rate of interest in the economy. While Soviet capital rationing acts in the direction of preventing the substitution of capital for labor in such an advanced, high-priority industry as metalworking, this is often not the case in the typical underdeveloped nation. For these reasons, there is frequently observable in currently underdeveloped countries a tendency to adopt the most advanced Western technologies which, while appropriate to an economy with the factor proportions of the United States, are not best suited to those of these countries.

V

I would like to conclude with a few comments concerning future prospects for the effects of Soviet institutions upon the technology and work-organization of the metalworking industry.

The advantage stemming from the tendency to minimize the capital/labor ratio on a given isoquant of production, so far as this can be done by substituting labor for capital, is one which is now disappearing. As the labor pool of underemployed in the countryside disappears and the rate of growth in the labor force declines, the social cost of labor rises sharply. It will be increasingly appropriate for the Soviet metalworking industry to shift towards more capital-intensive methods of production.

Becoming more speculative, we may say that the various problems arising from the existence of a tight seller's market for producers' goods and from rationed distribution of raw materials and equipment rather than distribution through the open market and by means of the price mechanism, would seem to become increasingly unpleasant as the Soviet economy grows more complex. It may be that present tendencies—however weak they may be—towards decentralization and the current groping for economic criteria of decision making on a

#### DISCUSSION

GREGORY GROSSMAN: Dr. Nutter's paper contains many valuable insights as well as much care and caution, and, in its skillful anticipation of possible objections, is somewhat of a frustration to the would-be critic. There is little in it to take detailed issue with. Yet its major conclusion—that in four decades of furious racing Soviet industry has been, on the whole, unable to narrow the gap between itself and American industry—is surprising, may be easily misinterpreted, and calls for some ciscussion.

But first, the method itself. As the author is careful to spell out, the method of leads-and-lags is only one approach among many to international comparison of growth. It is not a fully dynamic approach, in that although it can tell whether one contestant in a race has gained ground on another, it cannot indicate the speed at which the contestants are running at any moment or interval of time. Moreover, the method itself contains a time lag for it cannot tell us how far the leader has traveled since he was in the spot where the follower is now. Unfortunately, many of the interesting and important questions that we may ask about the Soviet economy are such that this methodological time lag becomes bothersome. Nutter realizes this, for in approaching problems of the more recent past and of the immediate future he in part abandons the method of leads-and-lags and turns to a discussion in terms of rates of growth. The predictive value of the method seems particularly to be very limited.

As I will try to show, Nutter's major conclusion depends entirely on his Thoice of dates in Russian history for the computation of lags. His terminal years are 1913 and 1955; yet their meaning and relevance are difficult to grasp, for (as the author himself reminds us) they span a highly turbulent and uneven era. The same can be said of each of his two subperiods: 1913-37 and 1937-55. At the least he should have also considered the shorter but much more relevant subperiods 1928-37 and 1950-55.

The author identifies the "Soviet era" with the years after 1913. But recovery from revolution, civil war, and economic collapse lasted until 1928, and only then did Soviet industrialization as such take off. (Incidentally, the prerevolutionary peak was 1916, when the index for all industry, large and small, stood some 10 per cent above 1913.) It would be interesting to compute by how much Soviet industries lagged behind their American counterparts in 1928 as well as in 1913. If we assume for the moment that the median lag for 1928 would come out to be just 15 years greater than the one indicated for 1913 in Table 1, or 43 years instead of 28 years, then the picture for the Soviet era is reversed. By 1955, instead of losing 6 years (in terms of the median lag for total output), we find Soviet industry gaining 9 years on us.

Further, might one not justifiably adjust the lags for 1955 downward by, say, 8 years to allow for the setback suffered by Soviet industry as a result of the second World War? The rationale for this would be that the war was hardly a "normal" or recurring phenomenon: that there was no similar ex-

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perience in the American economic "homochrone" (1880-1920) of the Soviet period; and that therefore we ought to allow for it in comparing Soviet and American economic accomplishments. Making this additional adjustment we find that instead of lengthening by 6 years (as in Nutter's Table 1), the median lag shortens by 17 years, from (say) 43 in 1928 to 26 in 1955. (The last is of course a notional lag, with the war years deducted.) This is another way of saying that, had there been no second World War, Soviet industry might have been in 1947 where it actually was in 1955 and where ours was in 1921.

The same may be true for any individual commodity. Let us take steel ingots, to which Nutter repeatedly refers for illustration. He finds that "Soviet production of steel ingots was 8 years further behind American production in 1955 than it had been in 1913"; i.e., the lag lengthened by 8 years. But if we start with 1928, when Soviet steel output just regained the 1913 level, we find by 1955 the lag shortening by 7 years, and the picture is reversed. And if we further allow for the war, the lag is shortened by 15 years; that is, had there been no war—admittedly a big "if"—in 19 years of industrialization the Soviets would have cut their lag in steel output by 15 years. In fact, because of the war, it took them 27 years to cut the lag by 7 years.

Nutter has fairly successfully, it seems to me, identified the period 1880 (or 1885) to 1920 in the United States as the most comparable, in terms of absolute levels of industrial output and rates of growth, to the period 1913-55 in Russia, although he would also be the first to point to significant differences. (Once again I should like to question the meaningfulness of regarding the years 1913-55 in Russia as a single period.) He is far less successful when he proceeds to surmise—because the method of lags becomes inapplicable here—that since there has been no clear retardation in the rate of growth of American industry since 1920, Soviet industry grew no faster than American industry during the past forty years or so. This I find hard to accept. American industrial output (FR index) increased roughly 3.5-fold since 1920. Surely Russian industrial production has grown by any reasonable weighting system very much more, perhaps several times more, than that since 1913. (The official Soviet claim is a 27-fold [!] increase, but this does not merit our serious attention.) The more rapid Soviet growth is fully reflected in the last two columns of Table 3, where, for the 21 commodities listed, the median ratio of Russian to U.S. output is 14 per cent in 1913 and 47 per cent in 1955. It is surprising, therefore, that the author should have been "puzzled" by other columns in the same table which show consistently that, commodity by commodity, the average rates of growth over 1913-55 were much higher in Russia than in the United States. His attempt to explain the puzzle away by "the fact that this is . . . essentially a comparison of young Soviet industries with mature American ones" is not entirely convincing. The USSR, too, has had its share of industries young even by our standards in this period. Inclusion of such "new" commodities as modern machinery, munitions, chemicals, new nonferrous metals, not to mention nuclear products, in the last column of Table 3 would probably not

reduce significantly the median ratio of Soviet to U.S. output for the year 1955.

What, then, of the author's major conclusions (end of Section II)? It is debatable, as I have tried to show, that "over the Soviet era as a whole, Soviet industries have generally lost historical ground to their American counterparts" in that "the lags have generally increased." A good case can be made that, for a more meaningful period, the lags have considerably shortened. It may well be that, statistically, "Soviet industry seems still to be roughly three and a half decades behind us in levels of output." But is the picture really as comforting as the unwary reacer might assume from this statement? It certainly does not follow (nor coes Nutter say so) that it will take Soviet industry thirty-five years to attain our present level of output. Indeed, we may well assume that the lags will be soon sharply reduced, if only for the reason that thirty-five years ago we stood, as history goes, on the eve of our Great Depression—a period which will be easy for Soviet industry to "leap over." And in fact, Table 4, which indicates the "planned" lags for 1960, illustrates this very well by exhibiting a bimodal distribution of lags (for total output) with years of the Great Depression lying in the trough between two clusters. The median happens to have leaped over the trough and fallen to twenty years; i.e., by this special measure. Soviet output in 1960 may correspond to U.S. output of 1940, while in 1955 it corresponded to our output of 1921. Should the Sixth Five-Year Plan be realized. therefore, in the course of five years the Soviets will have cut our lead by fourteen years.

The crux of the whole problem is well put by Nutter. Referring to the Turbulence of the Soviet era he asks: "How are trends to be interpreted over times such as these?" Indeed, how? The answer is not easy and is doubtlessly conditioned by the purpose. If we are interested in the record of the past, the method of leads-and-lags, supplementing a study of relative rates of growth, both carried in breadth and for well-selected periods, can tell us much. But the closer we get to the present the less useful the method of lags becomes. And if we are interested in even just the near-term prospects for the Soviet economy, per se and relative to the American—and who of us is not?—we must fall back largely on arguments in terms of recent rates of growth, buttressed by a judicious consideration of accelerating and retarding factors. It follows from Nutter's own prudent observations that what rates of growth derived from recent experience lose in historical perspective, they gain in minimizing the turbulence and heterogeneity of the base period.

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Wolfgang F. Stolper: Professof Witte has asked me to report in about ten minutes the results of my research on East Germany, undertaken under the sponsorship of the Center for International Studies. This is an almost impossible undertaking, considering that the document on which the summary presented here is based has about 350 pages. I cannot take time to discuss the estimating procedures in detail, though I feel that it is necessary to indicate at least roughly the procedures used.

The figures to be presented are as near as I could make them estimates

of industrial production, using the Western concept of gross value added and using industrial classifications and groupings which are as close as possible to the classifications published by the Statistische Bundesamt in Wiesbaden, West Germany. On principle, all calculations (which were made in great detail) were based on Soviet German data on output in physical units, valued in West Germany prices of 1936 and 1950. Here only the 1936 calculations are presented, which are more favorable to the East Germans when 1955 is compared with 1936, but which lead to almost identical results when 1955 is compared with 1950. An East German official index of "Gross production" (Bruttoproduktionsindex) exists, but as it measures essentially turnover, it is almost unusable for Western purposes, whatever its function and usefulness might be in the communist system.

The comparison with the Federal German Republic is of interest for several reasons: the two countries formed a cultural, economic, and historic unit which was divided in a manner which at least from an economic standpoint was quite arbitrary, whatever the political or military rationale might have been. Both Germanies were before the war, however, heavily industrialized and had in fact a very similar economic structure. Soviet Germany was, in particular, most definitely *not* the bread basket of the Reich.

To understand the industrial development, certain other facts have to be presented as a background. The major differences in the economic structure of the two areas before the war can be summarized as follows: the western part of Germany had soft coal of metallurgical quality and was the center of heavy industries. (The second important heavy industrial center was Upper Silesia which became Polish after the war.) In the Soviet area, lighter industries, including machine tool, prevailed. Both parts had chemical industries, with the bulk of synthetics (gasoline as well as rubber) concentrated in the east. The chief energy source of East Germany was lignite which even before the war was extensively used for power generation and chemicals and after the war became by far the most important source of energy everywhere throughout the economy. It has been substituted even in part for soft coal in a new ironmaking process.

This rough sketch is necessary to understand the direction as well as the difficulties of the postwar development in Soviet Germany. To these natural difficulties, as it were, have to be added two political difficulties: First, Germany was conquered, not liberated, and paid heavy reparations to the USSR at least until 1953. Planning in Soviet Germany concentrated, therefore, not only on overcoming the "disproportionalities" left by partition—to use a favorite communist word—but also on fulfilling the heavy reparations demands. The western part, on the contrary, got large-scale aid. Secondly, the Soviet world seems to be only very imperfectly integrated internationally—this seems to have been true even before the Polish and Hungarian difficulties made the existing integration precarious—while West Germany was successfully absorbed into a rapidly expanding world economy.

Finally, as a mixture of a "natural" and a "political" phenomenon, it has to be pointed out that Soviet German population is now about 10 per cent above 1939 but also 10 per cent below 1949, while West Germany's population is now about 25 per cent above 1939 and has continuously grown after the war. The two population movements are of course closely interrelated. East Germany has as a result a substantially worse population structure than West Germany.

Given these handicaps, development in East Germany is remarkedly good, even if it is not anywhere near as good as East German claims and even though it falls short of West German developments.

Officially, gross production is claimed to have reached in 1955 a level of 210 per cent of 1936 (the last prewar year for which detailed information is available) and of just under 190 per cent of 1950 when the first Five-Year Plan was inaugurated. Net production is said to have increased even more. My own calculation, using Western concepts, indicates that the 1955 level was only about one-third above 1936 and about 158 per cent of 1950, and I am quite confident that my own calculations are substantially correct. By comparison, West German production has about doubled between 1936 and 1955, and increased to about 178 per cent of its 1950 level. Thus developments since 1950 indicate that industrial production in the west increased substantially faster in the aggregate, though not much faster on a per capita basis. The crucial difference between East and West German development is that output in Soviet Germany was in 1950 at least 15 per cent below prewar, while output in the Federal Republic was already 111 per cent of 1936.

Electric power production, measured in kilowatt-hours, was in Soviet Germany in 1955 only about twice that of 1936, while it was 360 per cent of 1936 in the western part. While this does not prove anything, it strongly suggests that Soviet German industrial output must have increased more slowly than West German output, and that it cannot have increased as much as is officially claimed. Before the war, East Germany had a substantially higher per capita production of electric power than the West, a phenomenon explained in part by the heavy concentration of power consuming chemical industries in the East. Even in 1955, per capita production of electricity was apparently higher in the East than in the West, but the difference has become negligible; and even now, the five largest chemical plants alone used a fourth of the power generated.

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More important than the over-all index are the details of the industrial structure. In coal mining and gas (which could not be separated statistically), Soviet Germany has developed substantially faster than the West. Output in the East has about doubled compared to 1936, but increased only a third above 1936 in the West. Compared to 1950, however, the East increased by only about 40 per cent, while the increase in the West is about the same. This excellent showing is due to a number of reasons: the predominance of lignite in the East which is mined in open pits, while the soft coal in the West is mined by deep mining methods; the substitution in the East of lignite for virtually all other primary energy sources, particularly for soft coal previously imported from the Ruhr and Upper Silesia (from where smaller amounts still come); the fact that in the West oil is used increasingly and, surprisingly, that about a third of oil requirements are met by domestically

drilled natural oil; and, finally, of course, by the fact that planning emphasizes basic and heavy industries. For mining as a whole the advantage of the Soviet Zone diminishes quite a bit. The major mineral added to coal is potash, the production of which has increased faster in the West, even though it is a major foreign exchange earner for the East. Eastern output in 1955 was about 92 per cent above 1936 and about 40 per cent above 1950. Western output was 47 per cent above 1936 and about 38 per cent above 1950.

Planning concentrates heavily on production goods. This group of industries contains basically metalmaking, chemicals, cement and other building materials, and paper and pulp. Except for copper, there was but little metalmaking in the eastern area, but the other heavy industries, such as castings and, in particular, chemicals, were very well developed. Once again the showing of the Federal Republic is better when 1955 is compared with 1936. Since 1950, both areas increased by about the same percentage—about 75 per cent. Considering that the area of Soviet Germany had population trouble and built up a small iron industry virtually from scratch, the showing is good. Yet it is surprising that the growth was not faster, since the industries under consideration were always well developed in the East, and since this type of industry is so much favored by the planner.

The last-made comment applies even more forcefully to the group of investment goods which are basically the engineering trades. Here West German developments are substantially better than East German developments when 1955 is compared with 1936, and even compared to 1950, western output more than doubled while in the East it rose to only about 185 per cent.

Again we deal with a favored industry group, and moreover one for which the basis was already given. Two comments may be in order by way of explanation of the lag. The estimating procedure, which was rather complicated and cannot be even summarized here, probably underestimates the true growth. Secondly—and perhaps more important—this group contains such durable consumer goods as cars, the production of which used to be concentrated in the East, but has not recovered to anywhere near the prewar level. The explanation is, however, two-edged: as a consumers good, cars would not receive high priority but as an export good they would.

Still, in these three categories of basic, production, and investment goods East German development is good, at least since 1950, though differences in quality which are known to exist have not been allowed for, and though on the whole West German development is better. The major differences are that East Germany had not recovered to the 1936 level by 1950, while West Germany had surpassed it, and that East Germany was not successful in catching up.

Consumers are of course the chief sufferers. In manufactured consumers goods East German production is almost certainly even in 1955 still about 15 per cent below 1936 and only about 150 per cent of 1950, while in the West it is 84 per cent above 1936 and 65 per cent above 1950. Here, too, western qualities are substantially higher; more wool, less rayon; more of the good new synthetics; more real leather shoes, and better leather—more

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of everything and better qualities. In food industries, Soviet German development, too, is substantially below West German developments, whether compared to 1936 or to 1950. Here, too, qualities in the East are substantially worse, and variety is lacking.

Considering the handicaps, the achievements of the area since 1950 are considerable even though they fall short of the West—provided of course, that the data can be more or less trusted. One way of putting the result is that in the East the development of basic and heavy industries was purchased at the expense of keeping the consumers to the minimum which was socially and politically feasible, while in the West the absorption of expellee unemployment and the continued migration from East to West enabled output to increase all over the place.

Yet this favorable picture omits a number of uneasy differences. East Germany was after all already before the war a major industrial area and it gained in relative importance under the Nazis and particularly during the war. Even if quality differences are disregarded which exist all along the line and are openly admitted (the exceptions are the old East German industries like cameras or typewriters), the insufficient integration into a world market and the population picture combined to set definite limits to further expansion. East Germany has a much less viable economy than the Federal Republic. Interruption of coal shipment from Poland is bound to put a much greater strain on the economy than the Suez crisis is apt to put on the West German economy. East Germany is in an orbit where it is the most developed economy, with only Russia and Czechoslovakia having a substantial industrial base. Thus even before the cutback in coal shipments announced by Poland and before the disruptions caused by Hungarian heroism, difficulties were bound to arise in the raw-material base and the shipment of complementary factors (including food).

Furthermore, the study has concentrated on industrial production and nothing has been said about construction, particularly of housing, or of agriculture. Construction is visibly and substantially behind the West, and agriculture is not doing too well, but I have made no special study of these areas as yet.

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On the more optimistic side, East Germany, though remaining stolidly Stalinist in its politics, nevertheless has introduced more of the pricing mechanism into its planning, has improved the prices used, and has begun to increase incentives to farmers and workers so that handicaps introduced merely by mistakes and stupidities are apt to diminish.

HOLLAND HUNTER: Analysis of Soviet industrialization is a fascinating enterprise, as these papers have demonstrated. A host of problems arise under the rubric of what in advertising is familiar as the "dangling comparative": Soviet industrial growth has certainly been faster, but faster than what? Warren Nutter's paper provides fresh material for this issue. Equally thorny issues concern cause and effect: Soviet development has followed clearly discernible lines, but which outcomes have resulted from which policies? David Granick's paper presents stimulating observations on a specific set of

such problems. My remarks will deal chiefly with Granick's contribution.

Soviet experience in expanding its metalworking industries suggests several generalizations of interest for countries launching programs of industrialization. First, Granick shows that borrowed technology must be introduced into a backward economy in several stages. What may seem to be a self-contained complex of intricate equipment actually carries with it rather extensive requirements for an experienced organization to conduct its operation. In addition, its effective operation will generally depend on a supply of highquality material imputs—a demand which spreads the need for advanced and smoothly-functioning production techniques in ever widening circles of Walrasian interdependence throughout the economy. Since it takes time to develop an organized environment of experienced workers and managers and to raise the quality of material supplies coming forward, premature installation of isolated pieces of equipment, embodying very advanced technology, is irrational. Granick has found that Soviet managers wisely modified the engineering content of their borrowings back toward forms intermediate between preindustrial practice and the latest Western procedures. This part of his argument seems to be incontrovertible.

A second conclusion, however, relates to the relative abundance of labor and scarcity of capital in the early stages of industrializing. Here Granick argues that Soviet policy involved economizing very sternly in the use of capital, substituting labor for it wherever possible. But there seems to medanger in carrying this argument too far. The appeal to factor-availability as as argument for using labor instead of capital can, in effect, paralyze a drive toward capital formation. The labor-availability argument has familiarity born of long usage, but it is understandably somewhat irritating to countries wishing to industrialize.

In this connection it is important that Granick's phrase "substituting labor for capital" should not be misinterpreted. Soviet managers were substituting labor for capital in borrowing Western technological models; that is, they were introducing more labor and less capital than was involved in the Western prototypes. Nevertheless, the borrowing process as a whole consisted precisely in introducing much more capital than before into Soviet economic activity. The machinery industries Granick discusses were, in fact, the central bearers of this change. Hence Soviet experience exemplifies, somewhat paradoxically, a labor-intensive way of substituting capital for labor. As I am sure he would agree, it does not suggest that capital should not be introduced.

The problem of selecting the best stage of technology for importation and the best proportions between capital and labor can be thought of as a problem of balance between two objectives. On the one hand, the developing economy needs an advanced model around which to train a new producing organization. Such training, as Granick suggests, must be a major feature of a development program. Intangible capital is being created, embodied in the skills and experience acquired by all participants in industry. On the other hand, short-run increases in output call for intermediate technological forms and factor proportions that reflect current availabilities. Soviet experience

seems to show that a solution weighted toward immediate results tends to burden the capital stock with relatively primitive equipment and with processes involving an inefficient organizational structure as well. Under Soviet conditions, at least, the legacy of awkward technology and organization seems very difficult to disown.

By the same token, of course, we have here a potent source of improvements in productivity if more up-to-date procedures can be introduced—a means of averting a decline in the rate of industrial growth. The current Soviet Five-Year Plan rests heavily on exactly this sort of improvement. Soviet progress will tend to sustain current growth rates—whatever they have been—since the "advantages of backwardness" in being able to borrow advanced technology have by no means been exhausted by the USSR.

Turning now to the broad problem of subcontracting, Granick's analysis of plant autarchy as a consequence of forced-draft Soviet planning methods seems to me a major contribution. Neither the enterprise fearing nonreceipt of supplies and components nor the supplier penalized in various ways for devoting attention to them has been able under Soviet conditions to venture into the widespread interdependence which proves so effective in the West. It may support his appraisal of Soviet experience if other aspects of the problem are touched on.

A Russian tradition of some two centuries favored the building of large factories, and in the early years of Bolshevik industrialization this tradition was reinforced by the sheer political glamor associated with giant complexes. These lonely newcomers were too few in any area to support ancillary enterprises immediately, as indeed has been true in Western experience. But by the late thirties, Soviet officials themselves came to view this early policy as "gigantomania" and to call for smaller, decentralized plants. The number of plants in major industrial centers must now be sufficient to take advantage of those external economies we know are available if firms will purchase components, repair services, etc., from ancillary enterprises specializing in such work. Granick implies that separate private ownership impedes this process in market economies, where I would stress instead its prompt appearance when an industry has grown sufficiently. In the Soviet record he underestimates, as it seems to me, the barriers associated with a small number of plants and a low level of output in the early years.

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But in general his treatment of the subcontracting problem in metalworking is congruent in another dimension with what Gardner Clark has found in examining plant specialization in the Soviet steel industry and with what emerges from a review of Soviet transportation and location policy. In all three fields, Soviet policy appears to have overemphasized giantism at the expense of efficiency derived from the integration of smaller plants supplying each other in looser, freer fashion.

Yet it must also be said that Soviet policy has intended the growth of subcontracting, while management behavior under the stress of Plan goals has thwarted the regime's intentions. Here we confront an example—one of many—of conflict between distinct functions of Soviet economic plans. Economic efficiency calls for plan targets that permit smooth flows among pro-

ducing units, full supply pipelines, and adequate working stocks. Under settled conditions such targets would facilitate the use of continuous-flow methods within and among Soviet plants. However, Soviet economic plans have a galvanizing or goading function to perform, too, and it is this function which is served by pulling the economy up taut. Slack cannot be permitted anywhere. "Storming" campaigns at the end of each month, quarter, and year are encouraged. As Granick points out, these imperious pressures to meet ever advancing production targets certainly levy a marked toll on production costs and efficiency.

Conceptually, at least, one can visualize a plan-making process in which the advantages of ambitious targets would be set against the advantages of smooth-flowing production in such a way as to suggest an optimum balance between them. Soviet experience clearly reveals the outlines of the problem, but the internal details that would be required to support precise findings have not so far been released. Perhaps the plan-makers of present-day industrializing countries can only be notified that this particular optimum balance problem is a serious one.

Let me close with a brief comment on Nutter's paper. It is well to be reminded that we grew fast in our industrial youth and that Soviet industrial growth has been focused on a narrow range of outputs. But some may infer that the Soviets have not been catching up, and that they will not be closing the gap in the coming decades. Such a conclusion would follow from the methodology of Nutter's comparisons only if during the next forty-two years the USSR again experiences twenty-two years of decline and recovery with no industrial growth whatsoever and diffusion of emphasis in the Soviet bill of goods follows past American experience. Reflection will show that neither assumption can prudently be made the basis for American policy.

## ECONOMICS IN SCHOOLS

# ECONOMIC UNDERSTANDING: WHY AND WHAT

By BEN W. LEWIS
Oberlin College

For many years and in a variety of ways the American Economic Association has manifested its official concern with the teaching of economics at the college level. Ground was broken in a new direction, however, just a year ago when the Executive Committee of the Association accepted a recommendation to establish in the name of the Association a standing Committee on Economic Education, The concern of this Committee is with economics in the schools and in adult education. It is to serve as a focal point within the Association for the interests of members who are professionally concerned in this area; to point up, stimulate, and encourage active, serious professional work in economics at the school and adult level; and to improve the status of this work within the field of professional economics. The Committee is to serve as a point of contact within the Association for persons, organizations, and institutions outside the Association who are professionally concerned with economic education; to symbolize the active interest of the Association and its members in the problems of those on the firing line; to keep open the channels between teachers in the schools and economists; to work with Association committees or others on matters bearing on the teaching of economics in teacher-training institutions; and to make continuing recommendations to the Association relative to appropriate action by the Association in the area of economic education.

So much for the Association and its Committee. The Association can confer formal recognition on work in economic education in the schools, it can lend its name and its good offices to the movement, and it can make available the facilities of its journal and its meetings to help the movement on its way. The Association is now doing these things on a continuing basis.

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But the prime task of building economic understanding in the schools and among our people still lies ahead. This task is not the duty or within the competence of associations. The work to be done if this responsibility is met will be carried out by individuals; and if it is done well and the responsibility is fully met, many of the individuals will be professional economists.

It took about fifteen minutes to convince the Executive Committee that the economics profession has a deep and positive responsibility in this area. It remains to be seen how long it will take for the individual members of the economics profession to become aware of this responsibility, to define its shape and content, to accept the responsibility and to give positive, purposive expression to their acceptance.

Over the past five or six years I have been engaged, intermittently, inside the boundaries of economic education in the schools; and I have been associated with economists who have operated much nearer to the center. I have listened and I have observed; I have resisted, but I have become convinced. There is a job here to be done that only professional economists are competent to do. Somehow, economists must be moved actively into the development of economic understanding in the schools. It is the purpose of this paper, addressed, however presumptuously, to my fellow economists, to contribute one nudge in this direction.

It would be fair, I believe, to characterize the attitude of most members of our profession toward economics in the schools as apathetic or hostile. There are some who are interested and a few who are actively interested and favorable; but most of us give no thought to the matter and, of those who do, most look with displeasure upon the presence (and certainly upon any extension) of economics in secondary-school curricula. Those who speak out in the latter vein draw support from each other's bland assertions that "economics cannot be taught to high school youngsters" and "if pupils in the schools are exposed to economics, they will simply have more to unlearn when they enter college."

Facts and events are calling these assertions into question and, indeed, are making the asserters look rather silly. The facts are that most high school students do not go on to college. Undoubtedly there are problems growing out of the teaching of economics to those high school graduates who continue their education in college, but these problems need not worry us here. Our concern is with the 81 per cent of the boys and girls who enter high school who do not enter college. The formal understanding with which they are equipped to deal with the political-economic problems of twentieth-century life comes to them, if it comes at all, entirely from such association with economics as they have had in the schools. The facts are that economics can be taught, with meaning and with desirable consequences, to high school students; and in the actual event, economics is being taught to many of them and, on a spreading scale, will be taught to larger and larger numbers in the years ahead. We may—and should—question the kind and quality of economics to which growing numbers of high school

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students are being exposed. Indeed, this should be the real substance of our dominant concern in this area. But we may no longer appropriately question whether economics should or can successfully be taught in the schools. Situations—actual events—have a way of dissolving hothouse attitudes; and the typical attitude of economists on economics in the schools is overripe for dissolution. As economists we are today, at best, casual onlookers—not even guests, although we have been invited—at a party which we should have helped to plan and stage.

Let me elaborate. The case for economics in the schools is made of the same stuff as the case for democracy itself. The logic is inexorable, and its import in today's situation is alarming. Democracy—and this we have on the very highest authority—means government by the people. But the affairs of government, in large and increasing measure, are economic affairs. To be sure, they have political and other overtones; but no one who casts his glance even casually over the range of matters with which modern governments have to deal will doubt that these matters are economic in substance or in effect. Look for a moment: money, credit, commerce, corporations, tariffs, quotas, foreign aid, development, monopoly, fair trade, farm support, small business, oil prorates, highways, rails, communications, private power, public power, inflation, employment, management-labor relations, distribution of income, education, health, public debt—and taxes.

The relationship between government and economics is reciprocal. Somehow—and almost whether we will it or not—our economics classes are invaded by the Securities Exchange Commission, the Interstate Commerce Commission, the Communications Commission, the Power Commission, the Trade Commission, the Tariff Commission, the Economic Cooperation Administration, the Monetary Fund, the World Bank, the Labor Board, the Federal Reserve, the Treasury, the Labor, Commerce, Agriculture, and Interior Departments, the Social Security Agency, the TVA, Bonneville, the Army Engineers, the Budget Bureau, the Social Security Agency, the Council of Economic Advisers—and the current incarnation of the Hoover Commission.

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The simple business of living in the United States in our age calls increasingly upon men to participate actively with other men in the gigantic undertaking of collective governmental decision making on a vast array of complex economic problems and issues. It is demanded of these men that they have economic understanding. The stakes, to put the matter bluntly, are the survival of democracy and human freedom. Freedom will not remain if democracy expires, and democracy will not last beyond the day when it fails to discharge the political-economic tasks which we ask it to perform. Remember, democracy

is government of and by the people, and the capacity of the people to perform will set the level of performance which it is possible for democracy to attain.

Freedom and democracy are abstract concepts, but the matter of their preservation is concrete and immediate. This is our democracy, and we are "the people" on whose economic understanding and economic sense the outcome of our epic adventure in self-government rests.

It will not have escaped notice that in making the case for extending and deepening economics in the schools, I have resisted the temptation to speak of the need of each individual in our highly specialized and interdependent economy for knowledge and skills which will help him to operate more effectively as a buyer and seller of goods and services. Men need to know about credit facilities and practices, installment buying, insurance, tax forms, social security provisions, and a host of other matters in order to move intelligently in making and enjoving their living. But information about these matters is not to be accepted as economics, or in lieu of economics. Such information may come to the student as a by-product of his study of economics, and it is often both possible and productive to employ topics of this kind as a vehicle for developing economic understanding. It may be that many of these things should be taught for their own sake in the schools, if this does not mean too much time and resources diverted from more important work. But the call for more and better economics in the schools does not derive from the need for formal instruction in whether to buy or rent a home or the conditions under which term-insurance is to be preferred to an annuity. A man may be very shrewd in his personal dealings in these matters and still be sadly deficient in economic understanding.

For most of the people, including those who will join along the way, only the schools hold out any possible opportunity for disciplined training in economic thinking. If our democracy is to remain with us and prosper, it must somehow come to be manned by, and to express the will of, people who have known and been touched by economics in their secondary education; and somehow the economics that reaches them there must be made to contribute to their economic understanding. Can it be doubted that, somewhere in this imperative, a responsibility devolves upon the professional economist?

Just what are the status and the character of economics in the schools today: What is being taught, how well, by whom, and to how many students? We do not have exact answers to these questions, certainly not to the questions that call for expressions of qualitative judgments; but we do have impressions based on partial surveys and

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observations, and it seems very probable that further information would operate at most to affect only the intensity and not the basic shape of these impressions. Some schools offer economics in a separate "economics" course; in some schools economics is given a claim on one segment of a course in social studies or problems in democracy, and in a great many schools a little economics (of a sort) seeps by design or accident into courses in civics, history, conservation, and, of course, business and commerce. The Survey of Economic Education, by C. W. McKee and H. G. Moulton, published by the Brookings Institution in 1951, tells us that some 60 per cent of five hundred schools answering a questionnaire sent to two thousand schools, offered straight courses in economics, and that 18 per cent required the course to be taken for graduation. The Survey indicates that only about 20 per cent of the students graduating from the reporting schools actually took the economics course. State superintendents who were asked to estimate what percentage of students graduating from high schools in their state had taken as much as one semester in economics gave answers ranging from 1 to 95 per cent. Half of those questioned indicated 10 per cent or less and only one-fifth claimed as many as 30 per cent. The authors conclude that probably "less than 5 per cent of all high school students take the equivalent of a semester course in economics," and this finding is confirmed by a later Federal Security Agency survey. Economics is not a popular elective in the schools, but McKee and Moulton believe that about half of the students in our high schools are enrolled in some type of "social study" or "problems in democracy" course which devotes some part of its work to some kind of economics.

The trend toward more economics in the schools, in straight and integrated courses and through seepage, is certainly increasing. In its most recent annual report, the Joint Council on Economic Education, which is directly concerned with the promotion of economics in the schools, announces that thirty-two state and regional councils affiliated with the Joint Council are now actively at work. Many other groups and organizations whose interests lie in the extension of economics in the schools are also in the field. The existence and the evident strength of these organizations and this movement bespeak both the presence of a ground swell and its further growth, with very substantial effects upon at least the quantity of economics offered in the schools. While a vast desert still remains to be irrigated, enough has been done and enough is clearly in prospect so that we may, quite realistically and properly, turn from a consideration of quantity to questions of quality. What has the irrigation to date produced? What crops and flowers are growing in the desert already reclaimed?

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Please believe that I am not attempting merely to exploit a figure of speech when I express it as my judgment that a large part of the growth to date is rank. Nor can I properly be accused of professional arrogance in this expression, because I am also very clear that much of the fault must be laid at our own door. If you and I do not like what has been happening and what is now happening in the schools, where have we been and where are we now? To continue my figure of speech, I will suggest that too many of us have been devoting too much of our professional attention to the cultivation of orchids, and in the meantime our restored lands are producing lush crops of vines and weeds. The harvest is not all vines and weeds by any means. There is much for which to be thankful and to warrant hope for the future; but the future still has to be won. It is by no means certain that the vines and weeds will not take over.

The quality of the economics taught in our schools today is, by and large, not good, and, given the preparation which most secondaryschool teachers who are forced to teach economics in the schools have had, it is difficult to see how the quality could be otherwise, Again, I am quite aware that in making my point I may appear to be maligning the training, the skill, and the splendid work of many able and dedicated teachers of social sciences in the schools, I suspect, however, that most of the well-trained, able, and dedicated teachers of social sciences in the schools will agree completely with my appraisal. Most of the teachers offering work in economics in the schools have had no more than a single-semester college course in economics if, indeed, their preparation has included any formal college contact with economics at all. This is particularly true in the case of teachers in those courses in history, civics, social studies, and problems in democracy which include economics beneath the community roof-in the trunk room, just under the eaves. To be able to teach a subject such, for example, as history in such a way that students are made aware of economic issues and forces and are helped to gain well-integrated economic understanding calls both for thorough groundwork in economics and teaching skill of a high order. When the history teacher has had no college work in economics and has been unable through osmosis to achieve for himself a state of economic understanding, it is fair to assume that many opportunities to impart economic understanding to high school students are overlooked. This loss pales, however, in contrast with that which flows from any attempt by the same teacher to seize and exploit the opportunity. We can commend his alertness and imagination; we can only shudder at the almost certain outcome.

Many teachers, of course, are forced into the teaching of economics or "economic aspects" as part (and to them the least attractive part)

of a package deal which includes the teaching of subjects in which they can rightfully claim a degree of competence. Left-handed economics, along with study hall, serves to fill out schedules in these cases, and to many administrators the arrangement is entirely satisfactory, since economics can be taught by anyone who "thinks right" and has "common sense." It is the high priests who contribute the mysteries and the confusion.

Teachers who are completely untrained in economics can scarcely be expected to impart economic understanding, since possession would seem to be an absolute prerequisite to (if not nine points of) the ability to impart. There is a real question, however, whether the teacher whose economics training has been limited only to a single college course in "Principles" is much better prepared than the teacher who has taken no course at all. I think the answer must be an unenthusiastic "yes," and this even though I am quite aware of the familiar danger growing out of the possession of a "little knowledge." As of this moment I will stand on the proposition that the teaching of economics in the schools would be very substantially improved over its present state if all of those who undertake or are called upon to do the teaching had been exposed to at least one semester of formal college work in economics. My lack of enthusiasm in taking this position stems, of course, from the misgiving, common to us all, over the quality of our own performance in imparting genuine economic understanding to our own college students. But my confidence in my position is born of desperation. The hucksters have landed, and more are coming! The teacher who has had only a minimum of college preparation for his work is not well equipped to do fully and positively the job we want him to do, but he is in a better position by far to keep his head above the flood of "economics materials" now sweeping over the schools than the teacher who has never seen the inside of a college economics textbook.

The flood situation is reaching frightening proportions. The real tipoff on the state of economics teaching in the schools is disclosed by the requests—mounting in intensity at times almost to pleas—from school teachers and administrators to professional economists for "evaluations" of the economics materials which flow in upon them from every side and from above and below. The materials—statements, guides, briefs, pamphlets, books, workbooks, booklets, brochures, reports, bulletins, reprints, pictures, charts, films—come from individuals and organizations of every sort and description—firms, corporations, unions, churches, banks, groups, governments, leagues, bureaus, committees, foundations, boards, conferences, presses, councils—all bent on furnishing "sound" material to "our citizens of tomorrow."

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Most of it is provided free, and at that price it is no bargain. Some, of course, is first rate and representative of sound scholarship and of a genuine desire, in the best educational tradition, to make available objective and useful information about economic conditions, institutions, and developments. But I probably do not need to tell you that the great bulk of the material is simply propaganda for particular views and causes, especially truths—sometimes subtle, sometimes bold, but always packaged and presented in the most attractively persuasive form and manner.

It can be argued, of course, that all of this is splendid grist for the educational mill. What could be more valuable in the training of our future citizens than experience in appraising presentations of all kinds and in choosing the worth while and rejecting the worthless? The difficulty is that in too many cases there is no one around to guide their little feet in taking their first steps. The teachers themselves are not sufficiently prepared to distinguish between the worth while and the worthless. The guides themselves need guidance. The better ones are seeking help from us; the others are following the hucksters, and dancing as they go.

The most distressing feature of this situation is that the help which is being sought from economists by the more alert of the unprepared teachers is help of the wrong kind. The cry is for lists of problems (and answers), of basic concepts and understandings, for "sound" materials, and for instructions on what materials to use and to reject. "Tell us what to say!" "Tell us what to do!" These are cries which we cannot and should not ignore, but we answer them at our peril. And also imperilled is the whole cause of economic understanding unless we interpret the cries as evidence of a need deeper than the immediate exigency that prompts their utterance. No one can properly blame teachers caught without resources for asking that resources be supplied to them in packages, and at once. Airlift operations of some sort are called for. But the basic need is not for lists and packaged materials; it is for teachers who do not need lists and packaged materials flown in on an emergency basis. The real need is for teachers who are prepared by training to evaluate materials for themselves, to name what they want in the way of materials, and even to prepare materials for their own use and for others.

It seems clear that if we are to cure (or, better, if we are to prevent) rather than merely to alleviate, our efforts must be directed to the training of teachers before they begin to teach. There is a worth while patch-up job for us to do in assisting with the in-service training of teachers, whether or not they have had formal college work in economics; and, to the recent credit of our profession, a number of

economists are now participating actively in this area. But we must set our sights on pre-service training. Permanent improvement in the teaching of economics in the schools will come only if those who teach have themselves been taught.

Our problem is that we cannot make our impact felt if prospective teachers of economics (straight or aspects) simply will not take our courses as part of their training in college. And too many of them will not!

It is evident to all of us that those who are to teach the social sciences in the schools should be required to take at least one college course in economics as a condition for certification. But, possibly, before we take refuge in such a requirement and even if we believe it should be instituted, we should lock the doors, pull down the shades, send the children to bed and, just in the family, ask, "Why, don't they take economics?" No one knows the answer, of course, but I can tell you what the educators (some of whom have taken economics in college and some of whom have not) have been telling me on this subject for the past five years.

They tell me, first, that economics as it is taught in the colleges is too abstract and involved. Text writers and professors are so bent on making an exact science of their subject that they insulate it from all reality by the employment of artificial assumptions; and then, within this unreal environment, they amuse themselves by manipulating their elaborately contrived technical apparatuses in the endless conduct of meaningless exercises. Refinements are piled on refinements in ever more rarefied settings until the convolutions and interactions become so entangled, so incapable of being understood, and so devoid of import that the helpless student is left far behind—and glad of it! The text writers and the professors may know where they are and what they are doing—but who cares?

Economics as it is taught, the critics aver, is dull, and this despite the fact that, as a subject, it abounds with exciting problems and issues. We go out of our way, it appears, to make it dull. Our tyrannical insistence upon methodical and logical analysis and our dependence upon meticulous reasoning and cautious steps rather than upon electric insight and spectacular leaps have the effect of extracting from the subject all of its life and vigor. We beat it to death. Economics should sparkle. We take infinite pains to make it drab.

We load too much into the course. The student is forced to gulp his economics, as we heap it endlessly upon his plate. We impress him with the magnitude of the subject by conducting him on a roller-skate tour of the entire sixty-room mansion, including the rooms not yet made up. We intend to leave no rooms unvisited, and when the pres-

sure of time forces us to depart from our intent and to skip a wing or two, the student himself feels abandoned and completely helpless with reference to anything he has not actually visited. He may be able for a few days to answer anticipated routine questions about markets, exchange, and specialization, but he is without resources to deal with the question of protection of the zebra-breeding industry from African competition, because the professor failed to lead him on a fifty-minute safari through the chapter on "Tariff and Other International Economic Policies."

They say some things, too, about our superior, even our arrogant, attitude. Our intellectual pretensions carry us not only outside the world but above it.

And those who give thought to the way we teach economics to those students who are preparing to teach economics in the schools decry the fact that we refuse to give explicit instruction in pedagogical methods peculiarly suited to our subject. They tell us that the only instruction in teaching that the student receives from us comes to him quite without intent on our part: we demonstrate to him how not to teach!

However without foundation they may be, these are the reasons, according to the more bitterly outspoken of our educator critics, why prospective teachers steer clear of economics courses during their preservice years in college. Not all educators feel so strongly; indeed, and this hurts nearly as much, many of them do not bother to feel at all on the subject. No one, of course, contends that all teaching of economics by all teachers in college is completely bad. But, by the same token, no one can doubt that in educator circles, where we must gain support if we really want to achieve anything in the promotion of economic understanding in the schools, college economics courses do not rank, week after week, high on the list of hit tunes and best sellers.

The temptation is great to strike back at those who criticize college teaching of economics, but it will not do, among ourselves, to indulge this temptation. When we face the critics, it may give us some relief as well as being salutary in other respects to speak of the reluctance of education majors to accept college economics in any form that demands more from them than the willingness and ability to swallow light capsules in heavy syrup, but when we burn out our resentment we will do well to attend to the charges. We may be surprised to discover how many of them we ourselves have made, in camera, against ourselves.

If we think that what economics has to contribute is important, if we believe that it makes any great difference to anyone that we be heard and understood, it becomes our responsibility to make ourselves heard and understood. We do not discharge this responsibility by spending our professional lives talking to each other. Whether the fault is ours or the fault of others who do not appreciate us, the fact is that at the level of teaching prospective teachers and, through them, at the level of economics in the schools we are not now getting over. Economists are being listened to in some measure in Washington, in Wall Street, in the Merchandise Mart, and in the board rooms of corporations and unions. Few in the schools, however, are hanging on our words, and the teachers who constitute our line of communication are just not bothering to take the receiver out of its cradle. We do have something to say. It is our job to say it so that it will be heard and understood.

Briefly, now, to the substance. Just what is it that we want to convey? What is the nature of the economic understanding that we want to impart? When we seek, through the schools, to improve and extend economic understanding, exactly what are we trying to improve and extend? When we say that as minimum preparation for enjoyable and effective participation in our political-economic society we would like every high school student to be moved along the road to economic understanding, what do we see at the end of the road?

Before setting out my understanding of the shape and nature of economic understanding, let me first clear the ground with a set of negatives. Economic understanding does not consist in the accumulation of a stock of economic information or of an array of useful economic facts. It does not consist of the possession of a "Do-it-yourself" kit of answers to public economic problems or of a package of rules of sound thinking for solving these problems. Nor does it consist of skills or precepts to be employed in the conduct of economic transactions. Economics makes use of all of these things, but we are talking here about economic understanding, and "understanding" means understanding. Understanding is concerned with "why." Its interest in "what" is strictly ancillary to its interest in "why."

I will venture the proposition that to have economic understanding is to have a genuine sense of "what it's all about" as far as the economic phases of our lives together are concerned—a "feel" for economic issues—a rather clear impression of "having been here before" in the presence of economic situations calling for policy judgments, and hence a sense of direction and a workmanlike touch.

I believe economic understanding is to be gained through an understanding of the central core of economics that dominates all economic situations and issues—"The Economic Problem" faced by all societies of men who live and make their living together. We have economic systems or economies because we are confronted by "The Economic

Problem"; economies, all economies irrespective of characteristics or qualities, are fashioned, molded and maintained solely because this problem exists. To understand "The Economic Problem" is to know the purpose and functions of economic systems, and thus to have a clear unmistakable point of reference, a firm home base, from which to proceed in considering any and all questions of economic public policy. I do not claim eternal and universal economic salvation as the reward for such understanding, but I do not hesitate to say that, in its absence, only confusion can prevail.

"The Economic Problem," let us be reminded, is simply: What disposition shall society make of its limited human and natural resources in light of the unlimited needs and desires which these resources can be used to satisfy? This is the most important concept in economics, whether regard be had for economics as a formal study or for what it has to contribute at the school level to general education.

Let me elaborate this thesis. But, first another precautionary negative before I am accused of treating you solely to a bill of thawed-out economic ideas chipped out of our nineteenth-century deep-freeze, and of ignoring the shattering impact upon our thinking of today's dynamic flows, growth modeling, and equation splitting. "The Economic Problem" is not confined to static division; it does not reflect an assumption that product is fixed in amount and that economic alternatives relate only to kinds and direction. The problem is, what use shall be made of our resources? And I offer "use" to you as a dynamic concept which confronts us with choices bearing on fullness and growth as well as with choices of kind—with questions of "how much" and "how quickly" as well as with questions of "what?"

"The Economic Problem" emerges from two basic, interrelated conditions—(1) man's unlimited desires for goods in the aggregate and (2) the limited human and natural resources available to society for the production of goods in the aggregate.

To this audience, of course, all of this is elementary. But, precisely for the reason that I am talking to professional economists about conveying economic understanding to those who are not professionals and because I want very much to stress the sheer, stark simplicity of the mission to be performed, I shall presume, briefly, to elaborate the obvious. It is probably good for all of us, anyway, to be reminded occasionally of the central core of our subject. Awareness is essential to purposive activity, and the keen edge of awareness is sometimes dulled by long and intensive labor in the outer reaches where some of us spend a good deal of time.

Mankind has unlimited desires for goods in the aggregate. Each

one of us wants at least a minimum of material goods and services to satisfy his basic needs—such things, for example, as food, shelter, household furnishings, clothing, medical services, and so forth. But each of us desires much more than this basic minimum of essentials. Each would like more, and more varieties, of all of these things and many things in addition. The fact is that if each of us did not have to restrain himself by some notion of what he could afford, his individual desires or wants would run on endlessly. In the aggregate, such limitless desires, multiplied in volume by the number of individuals who inhabit the world, go far beyond anything that society can ever dream of actually satisfying from its limited resources.

Society's human and natural resources available for the production of goods in the aggregate are limited. The goods and services with which we satisfy our desires do not grow in limitless quantities upon limitless trees; they do not appear out of nowhere when we rub a magic lamp or utter a "secret word." Goods must be produced (even those few that do "grow on trees" have to be ricked—or picked up—and prepared for use). Production requires the use of human resources (labor) and natural resources (land, water, ores, minerals, fuels, etc.), together with techniques and methods for organizing and combining and processing these resources. And we know that, basically, these resources are scarce relative to human needs and desires. Despite our marvelous advances in technology and despite the fact that our standard of material living has on the average risen markedly over the centuries, we can never produce such an abundance of goods that everyone in the world can have all he wants of everything, with lots left over.

Let there be no confusion on this point. Occasionally in our society we are confronted by so-called "surpluses" of particular products (the "butter surplus," the "potato surplus," for example, or the "surplus of used-automobiles"). These represent supplies of particular goods in excess of the amounts which buyers with purchasing power at a particular time and place are willing to buy at prevailing prices. In an economic sense they represent particular overproduction in relation to effective demand for particular goods-misproduction or malproduction, or a use or allocation of society's resources of which society, by its market calculus, indicates it does not approve. In the world as we know it, "too many" potatoes means "too few" of other things; it can never mean "too much of everything." And even in the case of a particular surplus at a particular time and place, it does not necessarily follow that human desires for the particular good are not going unsatisfied somewhere else in society at the very same time. Breakdowns in society's institutional arrangements for bringing goods and desires together are not to be interpreted as evidence of society's power to produce without limit. By the same token, we must not be misled by terms and phrases which suggest contradictions where none exist. Specifically, there is no contradiction between an "economy of scarcity" and an "economy of plenty," where "scarcity" is understood as a condition of economizing and "plenty" is understood as its goal.

It behooves us, thus, to take care in the use we make of our resources—to be concerned about their use, to manage them, to "economize" them. The reason we bother to manage or economize our resources is simply that, since they are limited in supply relative to the uses to which we would like to put them—that is, since in an economic sense they are "scarce"—it makes a difference to us how they are used. The degree and manner and direction of their use and the disposition of the product resulting from their use have, of sheer necessity, been a primary, basic concern of all societies through the ages. This is what the study of "economizing," or economics as a social science, is about. It is all that economics is about.

Presumably any society will want its scarce resources to be "fully" employed (particularly its labor resources), and so used that their power to produce is great and expanding, and that the "right" goods are produced in the "right" amounts and, in each case, by using the "best" combinations of resources. Any society will be concerned, too, that the goods which are produced from its scarce resources are divided fairly among its members.

But the use of such terms as fully, right, best, fairly, etc. in defining the disposition to be made of resources suggests that alternative uses are possible and that society is faced with the never-ending problem of making millions of continuous and simultaneous decisions in the management or economizing of its resources. Surely we want our resources to be used fully and in the right and best way, but how full is fully? Exactly which ways are right and best and fair? We must remember, too, that society's answers to some of the questions may condition and set limits on its answers to other questions: a decision to promote technological advance may make employment less stable, a decision to divide the aggregate product more evenly among everyone may have an adverse effect upon the total amount produced, and public policies designed to bring about full employment may also promote productive inefficiency and aggravated inequities as an undesired consequence. Nonetheless, answers must be provided by society-to "The Economic Problem" faced by men who want to live in harmony and well-being in a world where not everyone can have all he wants of the goods and services that make up his material living and where, hence, the use made of our limited, valuable economic resources is a matter of concern to every living person.

Thus it is that all societies of men who make their living together must inevitably establish and maintain (or acquiesce in) an economic system or economy—a set of man-made arrangements to provide answers to the all-important economic questions which make up the over-all economic problem: How fully shall our limited resources be used? How shall our resources be organized and combined? Who shall produce how much of what? To whom and in what amounts shall the resulting product be divided among the members of society?

It is the job of the economic system (any economic system) to make the decisions and turn out the answers that society wants, whatever they may be, to these questions; and economics as a discipline is a study of "The Economic Problem" in all its parts, and of the institutional arrangements which men have devised to grind out the necessary answers to the questions which it poses.

The data and materials, the concepts and the "principles" with which the study of economics is concerned and the problems to which it attends all stem from and bear on this central problem: How do we and how might we dispose of the resources upon which the level and quality of our material life depend? This is "The Economic Problem." All other economic problems and issues—for example, the farm problem, the labor-management problem, the problem of taxation, the inflation problem, the problem of full employment, the antitrust problem—are simply partial manifestations of it in particular quarters and under particular conditions and can be dealt with effectively only in conscious relation to the central problem—the core of economics. This should be the starting point of our economics teaching, and its destination. Between the starting point and the terminus, students should become familiar with the significant features of our own mid-twentieth century economy with its ever changing combinations of individual markets and collective governmental economic activities and processes. They should become aware of its rationale and of how it has come to be what it now is and of how it contrasts with earlier and other economic systems. They need to know something of the structure and operations of our major economic institutions and the mechanics of income determination, resource guidance, and income distribution. They should experience the centering of issues and the marshaling and weighing of considerations involved in the determination of policy in one or two areas of public economic policy. But all of this—systems, processes, institutions, mechanics, policy problems—I repeat, all of this should be tied constantly to the core of economics—"The Economic Problem"—and related at every turn to the purposes for which men build economic systems because that problem exists.

Economic understanding, so understood, can be imparted to college students and, through those who go on to teach in the schools, to students in the schools. Our story can be told and it can be understood. To what purpose?

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A person who possesses economic understanding will relate his consideration of public economic issues, easily and purposively, to the central core—to the starting point, to home base. He will have a sense of the interrelationship of economic phenomena and problems—the "oneness" of the economy—the tie-in between each sector of the economy and the whole and between the economy and himself.

He will know his "way around" and his "way home" in the economy. He will face such choices as those between alternative satisfactions, between present and future goods, between alternative methods of production, between production and leisure, between stability and security and innovation and progress, and between economizing by the market and economizing by government, under whatever conditions and guises these choices may appear, with awareness and a balanced sense of consequences.

He will know that products come from production and will have an appreciation of the contribution made by diverse groups to the totality of production.

Familiarity with the mechanics of economics will not blind him to the reality that the operating forces in any political economy are human. He will know that economic life involves, essentially, the rational living together of human beings—a constant adjustment and readjustment in economic matters comparable to, indeed a part of, the constant adjustment and readjustment that characterize the total business of living together. He will realize that these adjustments frequently bring discomfort, even pain, to those established (vested) interests that are required to adjust, but that failure of one group to adjust may mean privation for other groups and stagnation for the economy as a whole. And he will relate this to situations in which his own interest lies in resistance to change (tariff price supports, "fair trade," "featherbedding") as well as to those in which his own interest would be served by the adjustment of others.

He will distinguish between areas where "sc entific" economic answers are possible, areas where such answers are impossible because necessary information or data are absent, and areas where only value judgments are called for and possible. He will realize that it is not the function of economics to provide answers to ethical or value problems but, rather, to help to define and identify such problems and to place them in sharper focus.

Finally, his realization that, in the very nature of the case, economic problems permit of very few "right" answers will be one measure of the depth of his economic understanding—and the realization will fill him with a sense not of futility but of purpose. It will point up for him his personal role in the political economy in which he lives.

This is what economic understanding can mean. This is what we would like to have for all of our people as members of a free, democratic society. We will never have all of it for everyone, but we cannot afford to seek and work for less.

Where, then, do we professional economists stand? Much in the immediate situation is encouraging. Promising activities to improve the teaching of economics in the schools are taking definite form, gaining strength and spreading. In-service courses, conferences, and workshops for teachers eager to better their own understanding of economics and to improve their teaching in the schools are now in operation widely over the country, both during the school year and in the summers. Economic councils, made up of teachers, administrators, and community leaders representing a cross-section of economic interests, are springing up. Useful materials designed to aid in the teaching of economic understanding rather than to dispense eternal economic truths are being prepared. All of these activities were begun and are still being carried and driven by educators and businessmen. Economists, at last, are participating, but it would be an exaggeration to picture us even at this late date as galloping in strength to the field of action.

But we are straggling on to the scene, individually and cautiously, carefully testing our footing with each step. Indeed, and this you will have to take on faith, within the month I have seen with my own eves an economist actually in conversation with an educator, and in the educator's office! And with my own ears I heard them talking about methods of teaching economic content. Both were participating on both subjects and both were relaxed. As a matter of fact, probably the most promising of all of the current programs for improving the teaching of economics consists of experimental economics courses now under way in over a dozen first-rate teacher-training institutions under the joint sponsorship of their economics and education departments. These courses, operating on a variety of lines, are taught by economists but are jointly planned and evaluated, and through the Joint Council on Economic Education all of the participants are comparing notes and exchanging experiences and suggestions. This is still a little short of the millennium, but some economists at least are getting their feet wet, and in the right pool. Our target must be the teachers-present and prospective. Something has been done, a good deal is being done, but much, much remains to be done.

A final comment. I have heard it said that economists with an eye to their professional future cannot afford to devote themselves to the problems of economics in the schools. Work at this level is professionally not quite respectable. It lacks professional status. I suspect it is true that most of our work at this level does not carry professional status, but I also suspect that in contemplating this situation we are inclined to confuse cause and effect. Certainly nothing that economists undertake is prompted by a purpose worthier than the improvement of economic education in the schools and the development of economic understanding among all of our people; and certainly nothing that economists undertake is more professionally challenging, if we measure challenges by the difficulties which must be faced by those who accept them. May I suggest, then, that professional status in this area is present, but latent: it awaits professional performance. Status will be abundantly present and evident for any of us who brings to this task a quality of professional performance worthy of professional status.

#### ECONOMIC UNDERSTANDING: HOW?

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#### Introduction

This paper assumes that knowledge of how our economy functions should desirably be the property of as many of our citizens as possible. It further assumes that the best available knowledge of the economy is contained in the science, or discipline, of economics and is hence in the hands of economists. The problem to be discussed is that of getting this knowledge from the economists to the public generally via the public schools—chiefly via the secondary schools. To gain this objective, the schools must be interested in participating in this transfer and in the provision of adequately trained teachers using the best possible teaching techniques in conjunction with superior materials in an environment most favorable to the transfer. This paper is intended to point out how economists can best participate in the solution of this transfer problem.

#### Economists and the Schools

Economists possess the best available knowledge of how our economy functions. Unfortunately, however, they do not therefore necessarily know the circumstances within which that knowledge can be imparted via the secondary schools. They know little of the secondary school student and his motives, experience, and ability. They know little of the curriculum within which this student is brought to learn. They know little of the secondary-school teacher and of his (or her) background of experience and ability. They know little of the attitudes and points of view of school specialists, administrators, and teachers. These things nonetheless must be known prior to the economist's effective participation in the transfer of his knowledge to the high school student. The first—and most important—prerequisite to effective co-operation of the economist in economic education is his willingness to learn of the public schools and of their students, teachers, administrators, experts, and curriculum.

This paper presents the views of an economist who has made an effort to learn of the public schools. It contains suggestions to economists as to what they might do to make economic education effective—suggestions growing out of certain experience with the problem of transfer.

### On the Definition of Economics

This paper assumes that knowledge of how our economy functions is in the hands of economists and is contained in the science of economics. Given this assumption, economics is what economists say it is. What is, or is not, economic education is thus properly determined by economists.

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But not all of the science of economics can be successfully taught in the secondary schools. Whether the limiting factor is time, student ability, or teacher training, the fact is that it is necessary to select from the whole of economics a portion to be offered via the public schools. Furthermore, in these circumstances, importance from the point of view of economic science unfortunately cannot be the only criteria of selection. The content selected must be content which the teacher can handle and content for which teaching techniques can be developed so that students, given their maturity, experience, and abilities, can—and wish to—master it. Economists should, therefore, select from their science that content which is most important and which is yet teachable in the secondary schools.

Teachability, however, is not a static thing. Work, experimentation, and pilot projects will turn content areas thought to be impossible for handling by high school youngsters into live, interesting, understandable units. The economist, therefore, should not stand on a given view of the possible in terms of teachability but should participate actively in its extension. This active participation may well include the initiation of, and participation in, experimental and pilot teaching programs with actual high school classes. It may well include the development of new teaching materials. The economist thus should not leave the transfer of his knowledge solely to those not necessarily skilled in his area.

The first task of the economist, then, is that of participating in the selection of content and in the development of the teaching practices and materials which make its transfer effective.

## Opposition to Economists' Definition of Economics

Only a naïve economist, however, should expect that his advice as to the proper content of economic education will be accepted without question. If he advises teaching the science of economics or teaching systematically selected important aspects from it, he will find substantial opposition. His opposition, likely to be found among teachers, school administrators, and collegiate experts on the secondary schools, will frequently contend (1) that economics, as a discipline, or drawn from the discipline, is simply too difficult and abstract, (2) that eco-

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nomics as a science is simply irrelevant because it does not necessarily change behavior or point to desirable behavior patterns, and (3) that economics must be included in an amorphous social science to be applied to the solution of social problems. Economics, in these views, is not teachable and not useful—if defined by professional economists.

These views have consequences evident in the present high school. curriculum. Believing economics, as defined by economists, to be too difficult and too abstract, there is great emphasis on "personal economics," defined as training in buying, training with regard to insurance programs, training with regard to job selection, training with regard to filling out tax returns, and simple training in business operations. Believing that economics, as a science, insufficiently points toward "proper" action (as voters, as consumers as workers), there is great emphasis on inculcating "proper" attitudes and indicating "appropriate" memberships and activities. Believing that discussions built around problems properly motivate students and recognizing that social problems almost always have important noneconomic aspects, there is great emphasis on interdisciplinary courses dealing with social problems, such courses usually drawing only unsystematically upon the content of economics and almost never yielding a well-rounded view of economics as a science. The results are "how to do it courses" (sometimes quite useful) in personal economics, courses inculcating attitudes and encouraging activity but without analysis, and "core," or "problems," courses in which problems are defined de novo in each case without the development of a background framework of systematic knowledge.

Of course, from the point of view of an economist, these views range from unproven (with respect to the objection as to difficulty and abstractness) through a failure to appreciate the virtues of a scientific approach to the analysis of society (when the criteria of "proper" behavior is asked of economics) to the use of a technique appropriate to arouse interest in a way which draws upon "expert" knowledge without significantly increasing the student's knowledge.

In part, these views spring from an inadequate knowledge of economics. When one does not know economics, economics is obviously too difficult, the substitution of moral judgments for analysis is imperative, and there is a considerable urge simply to rely upon expert opinion. But the economist is not blameless, either. In part, these views spring from a failure on the part of economists to present their science (in their college courses to future teachers, in their textbooks, in their other writings and lectures) (1) with a selection of content and in a form which seems interesting and intelligible to high school students, teachers, and administrators and (2) with its applications and uses made evident. Whether the fault is an inadequate exposure to

economics on the part of school people or a poor presentation of economics by its practitioners, the solution here is clear. It lies in more economics training for educators—training offered by economists who can and will make clear its relevance and its teachability at the high school level.

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More fundamentally, though, the dissident (from the point of view of the economist) views previously outlined may rest on philosophical differences. If the educator insists that most individuals cannot be interested in areas of knowledge not directly and personally useful, if he insists that the inculcation of proper attitudes and behavior and not command of an area of useful knowledge is the function of public school education, if he insists that finding the specific solution to specific problems is an end in itself, then, in this degree, there is, to my mind, little reason to foresee a fruitful co-operation of economists and the public schools in improving the teaching of economics. In this degree, there would simply be no agreement on what is to be taught. Fortunately, I think this area of disagreement can be held to a minimum.

At this point, it is possible to say that the economist must not only know the problems of the public schools, must not only participate in the selection of content and the development of teaching practices and materials, but he must work to "sell" this content to educators by making it interesting and relevant.

## On the Adequate Training of Teachers

The foregoing section indicates that teachers—and others related to the public schools—must be interested in and must be aware of the content of the science of economics if they are to embrace a program whereby knowledge of how our economy functions is to be transferred effectively to our citizens via the public schools. In addition, of course, teachers must have enough knowledge of economics to know what to teach and to feel comfortable enough, confident enough, doing so that they will seek out opportunities to teach it.

Are teachers of social studies courses in the public schools adequately trained? There is evidence that they are not. First, to the degree that teachers accept the previously outlined objections to the economist's definition of economics, they are most unlikely to have come to really understand economics. Second, a study of all social studies teachers in six typical Iowa counties has disclosed that one-fifth had no college course in economics and that the four-fifths who did have such a course generally took no work beyond the "Principles" course. Of the teachers in the group who had done graduate work, only one-quarter elected a course of any kind in economics. Further-

more, teachers in the group studied had taken their most recent course in economics an average of fourteen years before. Most striking was the fact that 25 per cent of persons teaching a course entitled "Economics" in their schools had no college training in economics at all. Third, experience with teacher groups in summer courses, in workshops on economic education, and on the job indicates a substantial unfamiliarity with the content of modern economic science.

Teachers, then, are not well trained in economics. Why not? The following reasons seem important: (1) Economics, as a distinct course, is not offered to most high school students. History and political science (civics) are so offered. Social studies teachers are hired to teach in these areas and they understandably tend to prepare there, not in economics, (2) Many teachers handling social studies classes have not majored in the social studies (or in any social science area) during their stay in college. They have only a minimum number of hours in any social science. Such teachers are usually coaches, administrators, counselors, or teachers in other areas first, social science teachers second. (3) The elementary college course in economics is likely to be more rigorous and "theoretical," less descriptive and "institutional," than alternative social science offerings. It may also be oriented to the business student, or to those planning professional economics training, so that the more general student feels out of place and unwanted. A rigorous, specialized course will, as we all know, almost always find but a limited market. (4) The college "Principles" course has certainly not usually built a reputation attracting college students preparing to teach, has not acted to stimulate prospective teachers who take it to take further work in economics, and has not seemingly equipped its clientele to do acceptable economics teaching in the high schools after they have had it. (5) The integrated, or "core," social science course or courses have frequently been substituted for some course work in the specific social sciences, including economics, by many college students preparing to teach. It seems to the writer that such courses are not likely to present effectively the content of economics to a student in a form which will make him in turn a confident, competent person to handle economics in his own classroom.

Having thus stated the problem, its solution is not easy. To the extent that teachers can make the teaching of economics in the high school their major teaching assignment, an undergraduate major in economics would seem desirable. However, it should be recognized that only a few of the very large school systems allow this kind of specialization. Furthermore, it is clear that the popularity of the integrated social science course program at the secondary level will reduce the number of specialized economics teachers still further. Neverthe-

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less, even in this situation, there are specific tasks for the economist who really wishes to equip his students who are to become high school teachers to do the best possible job of conveying knowledge of how the economy functions to their students. Such an economist, knowing an acceptable content for a high school economics course and the tech-• niques for its most effective presentation, will do the following: (1) He will make certain that this content has been thoroughly covered in the students' course of study. (2) He will concern himself that the student develops the ability to work independently in the content areas to be covered. He will want to be sure that the student can grasp the interests of his students, their questions, and in one new situation after another apply his knowledge. He will be concerned that the student knows more than his texts and a few basic books, that he knows and can use sources always available currently. This means problems, papers, and reports which force the student beyond simply parroting the text and lectures. (3) He will wish to co-operate with his colleague teaching the methods course in the school of education so that the techniques developed there are appropriate to the results hoped for by the economist—and so that he may anticipate the use of these techniques in his own mode of presentation.

To the extent that social studies teachers only incidentally teach a course in economics, or—and this is more likely—teach economics only incidentally in history, civics, or "problems" courses, an undergraduate major in economics for students preparing to teach is more than can realistically be hoped for. These students will major in the areas of their major teaching interest. It can only be hoped that such students will take a first course in economics and be stimulated thereby to sample further in the area.

Under the circumstance where only the first course in economics is likely to be taken by those preparing to teach, it is important that this course do a good job. Such a course cannot be simply a survey course which more or less shows off the entire content of economics on the assumption that a really detailed working knowledge of each portion will come with subsequent courses. It must focus on a few areas and cover them rather thoroughly, but it should do so without spending time on the development of techniques useful only to the research specialist. This course must not abide the passive student—the student who reads and listens but is not asked to do independent work. The student, when he becomes a teacher, cannot be passive. He must independently formulate problems and plans. He should be given practice in so applying his knowledge during the economics course. This course cannot rely upon a single text which becomes dated and progressively useless with the passage of time. This course should require

the use of materials which appear periodically and which the student can draw upon through the years. This course must develop an ability to take statements of policy and/or opinion of pressure groups and distill out for analysis the views contained therein—views as to how our economy is believed to operate, views as to how it should operate, and views as to how to take the economy from where it is believed to be to where it is thought desirable to be. This distillation should make possible a comparison of the view as to how the economy operates with the best possible scientific view. It should allow the clear labeling of value judgments as such. And, finally, the course must be interesting enough, not only to get the future teacher to take it, not only to encourage him to do more work in the area, but more importantly to persuade him to independent study and to independent use of economic ideas in his own classroom.

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The needs of this single course for future teachers require much of the economist. They require (1) a judicious selection of content areas ruthlessly limited to a number which can really be handled, (2) an integration of teaching plans and textbook use with the development of ability to use current material, (3) the direction of a great deal of independent work by students who are to be given practice in the individual application of economic knowledge in varied situations, and (4) the use of much interest-group material which is difficult of analysis. All of this, of course, is held desirable in addition to a dynamic, interesting approach which will be highly stimulating to students.

## Special Economics Courses for Teachers

It might well be argued that the course talked of above is precisely the elementary course in economics which should be given to all students. Perhaps it is. However, there are some factors which indicate the desirability of special courses, or perhaps special sections within the elementary course, for teachers. They can be summarized as follows.

First, the limited number of areas to be covered may desirably be different for teachers than for other students. If, for example, teachers are known to be typically concerned (in their high school history course) with monetary and banking legislation, then money and banking should be treated with a detail not appropriate to business students who will take an additional, specialized course in the area or to future engineers who might instead well get detailed work in the area of business costs (production theory) not at all appropriate to the future teacher. Recognition of the necessity for a limitation of content logically carries with it the idea that the limited areas covered should be those most useful to the various classes of students.

Second, even within an area which may be taught to all students taking the first course in economics, the approach to the area might desirably be different. Again, for example, the approach to money and banking for the student preparing to teach high school history might well be historical with the developing analysis used to throw light on the causes and consequences of developing, changing legislation. Such an approach may well be too time-consuming and uninteresting for other students.

Third, at least some teaching techniques for future use by the student-teachers might well be demonstrated in this course. Certainly, such demonstrations can be overdone. Students of college age can be sickened by oversimplified techniques which make too little of their abilities. Nevertheless, if aware of secondary school problems, the economist ought to be able to point to at least some useful teaching approaches and devices for his students.

Finally, the economist should recognize frankly that the social studies teachers in the secondary school will be confronted with a flood of materials and suggestions by special-interest groups. As a student in economics, the potential teacher should be given help in their analysis. The time devoted to this analysis, the detail with which it is handled, may well be excessive for other students.

For these reasons, a special course—or special sections within the basic course—for persons preparing to teach seems desirable where potential teachers are sufficiently numerous to offer an adequate enrollment. Furthermore, since many teachers do not take a course in economics as undergraduates, this special course should be available to them for graduate credit toward education degrees.

### The Teaching Environment in the Secondary School

The first-rate presentation of economics in the secondary schools is limited by several institutional and societal factors worthy of mention. They are: (1) Economics courses, as such, are only infrequently present in the schools and, where present, are usually offered only to few top students as an elective course. This minimizes the apparent need for teacher training in economics. This makes it necessary to "work economics into" other courses—the hardest kind of teaching job because it is much easier simply to teach an accepted content than to ferret out opportunities to insert it bit by bit when the occasion allows. The absence of a course thus reduces the economics training of teachers while it magnifies their teaching problem. (2) Teaching loads in the secondary schools are heavy. More than twenty hours of teaching per week is not unusual. Frequently, several different courses are taught. With this load, teachers must rely heavily on texts. Again,

where economics is not specifically taught, it gets little emphasis simply because the teacher has neither the time nor the energy for "working it in." (3) Teachers carry heavy additional loads. Many are coaches—one-third of those teaching social studies in six Iowa counties studied were coaches. Many others were counselors or principals. Almost all were faculty advisers to a variety of clubs, societies, and activities. (4) Community pressures set against the objective analysis of the economic aspects of our society are common. Such pressures encourage many teachers simply to leave economics alone.

In this area, the economist can do several things. First, he can work with agencies defining the curriculum to get economics recognized either as a course or with a particular place in existing noneconomics courses. This will establish a pattern within which economics is intended to be taught and will encourage teachers to prepare to do it. Next, he can aid in the development of student materials which can be utilized in the existing curriculum. Busy teachers will use these materials when they will not develop materials of their own. Finally, the economist can be active with adult education groups to prepare the way for objective work in economics in the schools. As an outsider, he can do much to make analysis of the economic aspects of society respectable within communities which will then actively approve economics work in their schools.

### The Economist as a Consultant

As school systems and their administrators and teachers come to be more and more interested and concerned with improving the teaching of economics, economists are likely increasingly to be in demand as consultants to the public schools. Upon first consideration, this seems unqualifiedly good. Economists need to know more about the public schools. The public schools certainly need additional knowledge of economics. There are, however, certain qualifications which should be noted.

First, the economist should avoid being, or seeming to be, simply the outside expert bringing his knowledge to lesser beings for their unexciting use. So long as the economist seems an outside expert, economics remains outside the schools to be drawn upon, not inside the schools to be taught. So long as the economist is aloof, his influence will be limited by a lack of knowledge of classroom situations and his advice will be unnecessarily pedantic and remote. Therefore, the economist should seem a teacher with a particularly good command of a specific subject matter who desires to help in the effective presentation of that subject matter. He should bring economics into the schools, learning of teacher and student problems as he works.

Second, economists are limited in numbers, in time, and in interest in economic education. As a result, economists are likely to be a scarce factor in the building of economic education programs in the schools. They must guard against excessive demands upon their time arising from requests from the schools for assistance. This means that they must generalize their experiences and make them available for wider, more impersonal use. They will no doubt be obliged to develop handbooks, teaching materials, and other items which summarize programs and techniques found successful. However, this generalization of experience follows a series of intimate experiences with economic education in the schools and requires the prior acquisition thereof.

### What to Do

If it be agreed that at least some economists should be concerned with economic education, if it be agreed that these concerned economists should work to the ends referred to in this paper, just how should these economists get involved and active in programs of economic education?

It seems that the following are roads to active participation. First, economists can associate themselves with the work of the Toint Council on Economic Education and with its various associated state and local councils. This organization's most outstanding achievement has been the bringing of economists and educators together for the mutual analysis of, and attack on, their mutual problems. Second, economists can make known their interest in economic education to schools of education in their vicinity. Many times—not always—the people in education will welcome co-operative work designed to improve their instruction of future teachers and to improve practices in the public schools. Third, economists can become known to, and perhaps active in, the various educational associations so that members thereof come to feel free to ask advice and counsel. Fourth, the economist can make known his willingness to consider serving on, or giving advice to, the various agencies and committees responsible for building curriculum in state departments of public instruction or in particular school systems. Finally, and most importantly, the economist can respond co-operatively and with an open, unprejudiced mind to requests for assistance which almost inevitably will come his way from the schools and associated groups now increasingly concerned with conveying economic knowledge to the secondary school student.

If economic education is important, the economic profession must be concerned with it. Its concern must be evidenced by the personal involvement of at least some of its practitioners. This personal involvement must embrace precisely the same kind of careful, analytical work

that any other area of concern to the economist requires. It requires knowledge of the problem. It requires the careful, experimental building of techniques for its solution. It therefore requires our time, our interest, and our best efforts. If we are not willing to give these things, then we must resign ourselves to an economic illiteracy for which we must, with our fellow Americans, bear the consequences—but with the additional knowledge that we might have made a difference if we had but chosen to do so.

### DISCUSSION

Meno Lovenstein: Read together, Professors Lewis and Bloom have insightfully summarized what is challenging, compelling, and practicable in economic education. They have faith, at once both shaken and confirmed by experience, that noneconomists can with our help come to share a significant part of our knowledge (assuming, of course, that we have it ourselves).

Both agree that piecemeal economic understandings are not the same and may not add up to a basic comprehension of or orientation in economic analysis. With this conclusion, I fully concur. Yet Professors Lewis and Bloom are not in agreement between themselves as to what shall be presented as basic economic analysis. Professor Lewis would center on "The Economic Problem"; Professor Bloom indicates that a selection must be made but he does not, except for a few general qualifications, state what the resulting content should be.

Whatever the content, each paper argues that it should be a central responsibility of economists to see that their analysis is incorporated into human affairs. Professor Lewis merits a special commendation for presenting the necessity in terms of the assumptions and mechanisms of a democratic society. His argument implies a command that economists become patrols into the no-man's land between analysis and policy. Professor Bloom, in his perceptive description of the problems of secondary education, has alerted us in general to the craggy paths and toe-hold cliffs which stand between a clear idea and a human being.

Yet, in spite of their obvious awareness and respect for the educative process, neither Professor Lewis nor Professor Bloom, it seems to me, recognizes fully what such cognizance means for the discipline of economics. For both of them, it appears, economics is a determined complex of relationships. The structure and organization of these concepts are given. The questions appear to be only: for Professor Lewis, does one focus on "The Economic Problem," or, for Professor Bloom, does one make a selection of content "which is most important and yet teachable in the secondary schools"?

Their self-recriminations about the teaching of economics do not extend to a questioning of the traditional conceptualization of the science. In my view, the basic difficulties do not lie in the rigor of analysis or in the use of curves but in the gaps, disorder, and confusions in the discipline itself.

A course in the principles at once pathetically emphasizes and slurs over these failings. Let us mention but a few: the elaborate analysis of market price in the chapters on exchange which are virtually ignored in the treatment of distribution; the partial, unintegrated use of the national income approach; the unreconciled relations between micro- and macroeconomics; that odd character playing the role of government who wanders from page to page, looking for context.

As professionals, we may be aware of these shortcomings. But we are not sensitive to the impact of such inadequacies on those not well enough oriented to tolerate such confusions.

It is not the educator's responsibility to perform as an economist. He is not obligated to fill in the gaps and remove the disorders in economic analysis. But he can show us—or by co-operation with the educator we can find out—what he believes he knows about learning, conceptualization, order of presentation, forgetting, and the special circumstances which create particular learning situations.

The economist who really makes an effort to understand the educator will be helped, of course, in his presentation. But it is not often appreciated that the economist will also be aided in his own economic analysis. He will discover, for example, that the broad generalizations or groupings which organize a discipline can be made in such a way that they facilitate both analysis and communication. To illustrate, the conventional four economic processes of production, distribution, consumption, and exchange are not, either as analysis or pedagogy, the most effective ordering of economic relationships. The objection to them is not that they are abstractions but that they may not be the generalizations best suited to relate and suggest connections between experiences and principles.

Such reappraisals, when fully pursued, will make it clear that method and content are not discrete and unrelated categories. It will help destroy the prejudice that the economist discovers or manufactures the "thing" (e.g., "The Economic Problem" or a selection of content) while the educator delivers the package. Much of the troubling conflict between problem-solving and economic analysis can be dispelled by an appreciation of the relations of the learning process to technical analysis. Finally, interdisciplinary efforts will have something more substantially binding than a hyphen.

Once it is recognized that the educative process—or, more fully, the process of communication—can modify the organization of a body of relationships, the way is made clearer for economists to work professionally in relating analysis to policy. Professor Lewis views it as part of the economist's responsibility that he be "heard and understood." Professor Bloom lists some things that economists can do. I believe that a deeper appreciation of the educative process will clarify the economist's responsibilities and duties in economic education and in policy decisions.

It has usually been accepted that economists, as social scientists, may demonstrate from analysis what will follow from various courses of action but that they should not pass a judgment or seek to influence what will be done. In its purest form, such a position assumes that noneconomists, i.e., people, will be able to follow the analysis, or how else would they be certain about the conclusions? If they ask the economist to suggest a preference, then surely he will have influenced policy—and most undemocratically.

If the analysis is to be of a high order, we are asking for a world full of economists, which is certainly a value judgment and hardly a good one (according to my value judgment). If, on the other hand, we are implying that the subtleties and depth of understanding which come to the economist from years of preparation and study are already possessed by masses of people without such a background, we are saying that an objective economist is most effective in a world in which there is no economics.

Professors Lewis and Bloom, in urging that economists be heard and understood and do something, are in fact redefining economics and the work of economists. They are not, by fullest realization, describing an adjunct to one's professional duties or arousing the stuporous conscience of a citizen. What is now required is professional awareness of the total social and intellectual complex in which the economist and his science function.

The suggested influence of the educative process on the conceptualization and presentation of economics must then be enlarged into a whole strategy of communication. The entire society becomes an educational problem. The economist must include in his discipline the requirement that he be understood as broadly as possible. It is not a question of popularizing or simplifying. The purpose is not to create an illusion of understanding to support a fiction of democracy. It is rather a deepened understanding of how economic analysis functions in an enlightened democracy:

Economics differs fundamentally from some other bodies of knowledge, say, medicine, whose practioners may be certified to society, leaving the beneficiaries absolved from understanding. In the nature of our society, freedom in economic activity requires a common understanding of economics, or else if the economist makes the decisions himself, he would destroy the economic system which he presumes to understand.

In assuming that the citizen should understand the system which, in the aggregate, he directs, we are, in fact, creating a new microaggregate economics. The participant in economic activity makes a decision as a citizen and as an economic unit to help produce the aggregate effects he desires. The understanding on the part of the individual is the micro aspect; the effects are aggregate. The citizen, as it were, becomes the "business unit."

In time the full implications of economic education will be realized. We have been greatly helped toward such realization by the imaginative and comprehensive understanding which Professor Lewis and Professor Bloom have presented in their papers.

LLOYD F. PIERCE: Those of us who are interested in broadening the scope and improving the quality of economic education in our secondary schools are deeply indebted to Professors Bloom and Lewis for their realistic statement of the problems we face and for their careful delineation of the alternatives open to us.

There appears to be general agreement in both papers as to the scale of the problem before us. Excluding seepage from other courses which may be great but hard to gauge, evidence is cited to the effect that less than 5 per cent of our high school students now take a course in economics. While this is serious in itself, it is further pointed out that those who enroll in economics are often treated to a poor substitute in the form of a course limited to "personal economics." Finally, it is suggested that more often than not the course in economics is taught by those who are untrained or poorly trained to do the job.

It also seems to be agreed in both papers that this condition, in the final analysis, is due to an impasse between economists and educators. On one

hand, the majority of economists know little about the secondary school program and the possibilities of successfully introducing economics into it. On the other hand, most school administrators know little about economics and, as a consequence, care less about making room for it in their curriculum.

It is obvious that if this impasse is to be broker the initiative must come from the economists. The harried school administrator, beset at every turn with proposals to expand his already overcrowded curriculum, would probably be pleased if we would continue to rest in peace. This fact was forcibly brought home when we asked twenty high school principals in our area why they did not offer a course in economics in their school. Their most common answer was that their curriculum was already evercrowded. Thus, if we decide to accept the call to action as set forth by Professors Bloom and Lewis, we face the prospect of competing in a highly competitive market which will require our maximum effort if we are to entertain any hope of success in our endeavor.

Whether our future strategy is designed to establish and expand beachheads in existing courses or to introduce a separate course in the curriculum,
I believe that we all agree with the recommendations in the principal papers
that we must (1) decide what it is we want to convey and develop appropriate
materials to implement our decision and (2) train those who are to man the
front line trenches to do a first-class teaching job. Since I am in fundamental
agreement with the position taken by these two writers, I shall merely attempt
to underscore and supplement some of the specific suggestions which they
make made.

In view of all that has been said it is somewhat ironic that there is still great uncertainty about what should be included in an abbreviated course of study for the beginner, whether it be for the high school or college student. I suspect there would be considerable divergence of opinion if each of us were asked to define our minimal course of study for the beginner. While a certain degree of latitude is clearly desirable, my colleagues and I have been acutely aware of the necessity of some consensus in this matter. Six years ago our institution adopted a general education core program which required each student to successfully complete the first quarter of our basic year course in economics before he could graduate. Of course for a very large percentage of students, this became a terminal course in economics. Recognizing this fact we attempted to satisfy the needs of the terminal student as well as the student who planned to take additional economics.

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After a great deal of experimentation we decided to build our course around "The Economic Problem" as defined by Professor Lewis. We decided to begin by dwelling at length on the nature, origin and implications of "The Economic Problem" because all subsequent material was to be related back to it. This was followed by a discussion of the nature and function of economic systems in solving the "Problem." We felt that even the beginning student should have an understanding and appreciation of his own system; so we decided to spend considerable time on the meaning of such key institutions as private property, the profit motive, competition, the price mechanism and the government and their function in solving "The Economic Problem" in

our country. Finally, we considered the extent to which our economy as well as others have solved the "Problem" which involved such related problems as growth, stability, etc. Four years of experience have demonstrated to our satisfaction that this choice of content produces the desired outcome in our particular situation. Our greatest single problem has been the lack of suitable materials. Unfortunately, our textbooks are inadequate and we have not been able to locate or develop completely satisfactory supplementary materials.

With this background of experience I was encouraged last spring to assume the direction of a class in economics in our laboratory school to discover, among other things, whether the high school student could grasp the essential elements of the course we were using in our college classes. I found this to be a highly challenging experience. Of course, it was necessary to discuss ideas in simple terms and great emphasis had to be given to the process of establishing relationships between the everyday experience of the student and the broader social problems under consideration. In the final analysis, however, we covered essentially the same range of ideas which was covered in our college course. Any doubts that I had concerning the ability of the high school student to develop an understanding of economics was dispelled by this experiment. Although my students as a whole were certainly no better than average, they demonstrated a far greater ability to manage our abstract concepts than I thought possible.

It is encouraging to note the number and character of institutions which are at the present time critically examining the organization and operation of their teacher-training program for economic education. Experience has demonstrated the value of this self-criticism. A little more than a year ago the Joint Council on Economic Education encouraged the staff of my institution to take a long hard look at the pre-service phase of its economic education program. As is too often the case, this self-study revealed that the responsibility for teaching the subject matter, the methods, and the supervision of the teaching experience of the student were fixed in three different staff members in three different departments and no attempt was made to coordinate their activities.

The implication was obvious and as a consequence I arranged to assume the primary responsibility for each phase of the program. This ultimately resulted in (1) substantial modification of the content and methods employed in the third quarter of our basic economics course which is required of all students who plan to teach economics or social studies; (2) development and participation in the instruction of a new course in methods of teaching social studies with representatives of the Departments of Sociology and Geography; and (3) personally supervising those who elected to take their student teaching in economics in our laboratory high school.

This arrangement centralized responsibility and permitted close supervision of the student's training program from the time he mastered the subject matter until he appeared before his first class. Our experience is still too limited and evaluation is too difficult to permit a great deal of valid generalization but we all feel that the results have far exceeded our expectations.

Finally, I would like to suggest that those of us who have been spading in

Professor Lewis' "desert" realize that we have hardly scratched the surface. However, the valuable experience we have accumulated indicates that the job can be done and we believe it will be done but it is not one that should be undertaken by the fainthearted.

BENJAMIN A. ROGGE: If I had the courage and if I were not so fascinated by the sound of my own voice, I could now establish a meaningful precedent in economic discussions. I could say: "I have read the papers prepared by Professors Lewis and Bloom and I agree with what they have to say." Then I could sit down.

That I do not do this is symptomatic of one of our faults that makes us less than universally popular. We talk too much, too often, and too long. We are too interested in our places in the shifting hierarchy of the profession and too little interested in the relevance or significance of what we are saying. We play at a scholar's version of Stephen Potter's "oneupsmanship," with our major ploys reserved for the footnotes. We are less desirous of communication than we are afraid of "ex-communication."

It is little wonder that our students find us dull, that our campus colleagues find us amusing, and that the general public is delighted when our predictions prove to have been wrong.

I have found us playing this same game of thrust and parry—of "status, status, who's got the status"—in the Workshops in Economic Education designed to inform the uninformed and excite the unexcited. I have watched the expression on the face of a forty-year-old teacher of American history as she sat, still panting from a postdinner game of badminton, listening to a bright young economist as he tried hard to communicate but even harder to protect himself from the scholarly error or oversimplification which his colleagues could chide him about over the uniced highballs that evening. She seemed to be feeling as E. B. White once described himself as feeling: like a reluctant conspirator in a plot he did not understand.

Now let me protect myself. I do not believe that accuracy of statement is unimportant or that communication comes before knowledge of the material to be communicated. I do not think that economists are incapable of communicating or that all or even a majority of economists need be brilliant expositors to lay and professional audiences alike. But I am convinced that the profession is guilty of excessive preoccupation with minutiae, with trivial refinement of trivial propositions, of massive expenditures of time, effort, and money on the gathering of data to answer trivial questions. I am convinced that these characteristics are produced by a selection principle within the profession (and particularly on college campuses) which overemphasizes socalled "scholarly achievement" and underemphasizes communication skills. The young scholar who wishes to make progress is almost forced to jump into the scholarly publications race, even if he has nothing really significant to say at the moment. Nor do I see any real hope for economic education of the kind we are talking about here so long as this selection principle is applied. Certainly it is discouraging to find younger economists apologizing for their participation in activities such as the Workshops in Economic Education. As one of them once said to me: "This is a pretty low-level operation, but I couldn't turn it down because I needed the money."

The formation of a standing Committee on Economic Education in the American Economic Association is an encouraging note, and particularly so in light of the high caliber of the men appointed to that Committee. But it is revealing that the sessions on economic education at the annual meetings are always scheduled on the afternoon of the last day of the meetings. Thus those who have to leave early will not miss anything of importance.

I would like to propose the creation of an American Association of the Teachers of Economics, with membership drawn from the high schools as well as the colleges and with strong emphasis on the participation of those who are teaching economics in the teacher-training institutions. Such an association could do something to reduce the insularity of each of the various groups now engaged in teaching economics and could serve to give greater recognition to the role of the teacher and to the man whose primary contribution is in the teaching role. It could also give economists a continuing opportunity to make the case that Lewis and Bloom have made so well today: that much of what passes for economic education in the high schools and teacher-training institutions today is certainly not economics and may not even be education.

I make this proposal in spite of my instinctive suspicion of and lack of confidence in do-gooder, crusading organizations. However, the need for some kind of action is clear, and this might be a forward step.

## AMERICAN ECONOMIC ASSOCIATION

# **PROCEEDINGS**

OF THE

SIXTY/NINTH

ANNUAL

MEETING

CLEVELAND, OHIO DECEMBER 27-29, 1956

### PROCEEDINGS OF THE AMERICAN ECONOMIC ASSOCIATION

### ANNUAL BUSINESS MEETING, DECEMBER 29, 1956 HOTEL CLEVELAND, CLEVELAND, OHIO

The Sixty-ninth Annual Business Meeting of the Association was called to order in the Whitehall Room of Hotel Cleveland at 4:45 P.M. by President E. E. Vitte. The minutes of the business meeting of December 30, 1955, were approved as published in the *Papers and Proceedings* and the actions of the 1956 Executive Committee were ratified, as were the reports of officers and committees. The minutes and reports are all published in the "Proceedings."

The reports of the Secretary and Treasurer, the Finance Committee, and the Auditor were presented by James Washington Bell. In response to numerous inquiries, the Secretary explained why there should be so long a delay in the publication of the 1956 Directory. In anticipation of the Directory, a minor membership campaign was undertaken and this, together with the overwhelming response, added greatly to the routine operations of the office. Some one thousand names were added to our rolls. The effort to carry this extra work with only slight addition to our staff caused delay in sending membership invitations, which in turn necessitated processing questionnaires received after the June 15 deadline. A further complication was the addition of the American Men of Science questionnaires, which served to supplement those of our members who did not answer our own questionnaire.

Despite the increased costs of operation, our income has sufficed to keep us in the black, though the surplus of \$738 is a modest one, and, barring unforeseen profits on sales of securities or revenue from other sources, we can anticipate a large deficit for 1957. These reports were accepted, with a vote of thanks to the Secretary-Treasurer, the members of the Finance Committee, and the Auditor.

The Managing Editor, Bernard F. Haley, reviewed the activities of the office of the American Economic Review and the work of the Editorial Board. The contents of the Review by classified subject matter—main articles, communications, reviews, and so forth—and the budget are presented in full in the "Proceedings."

The activities of the Committee on Research and Publications were briefly summarized by the Secretary and the present status of the other standing committees was outlined. Professor B. W. Lewis reviewed the purposes of the Committee on Economic Education, the co-operative relation of this Committee to the Joint Council on Economic Education as authorized by action of the Executive Committee, and the proposed use of the information obtained from question 7 of the Directory questionnaire when the results will have been processed. Reports of our representatives on the ACLS, the SSRC, and the NBER were not presented, but these will be made a part of the "Proceedings."

The Secretary presented the report of the Committee on Elections and the certification of the election of new officers for the year 1957 as follows:

In accordance with the bylaws on election procedure, I hereby certify the results of the recent balloting and present the reports of the Nominating Committee and the Committee on Elections.

The Nominating Committee, consisting of Jacob Viner, Chairman, Merrill K. Bennett, Edward H. Chamberlin, Edwin B. George, Richard B. Heflebower, and Aryness Joy Wickens, presented to the Secretary the list of nominees for the respective offices:

### For President Morris A. Copeland

For Vice-Presidents Ben W. Lewis Joseph J. Spengler Frederick V. Waugh Charles R. Whittlesev For Executive Committee Solomon Fabricant Walter W. Heller Faith M. Williams Holbrook Working

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The Committee on Elections, consisting of Marshall D. Ketchum, Chairman, William C. Bradford, and James Washington Bell, prepared biographical sketches of the candidates and ballots were distributed early in November. The canvass of ballots was made on December 12, 1956, and the results were filed with the Secretary.

From the report of the Committee on Elections, I have the following information:

| Number of envelopes without names for identification | 64    |
|------------------------------------------------------|-------|
| Number received too late                             | 32    |
| Number of defective ballots                          |       |
| Number of legal ballots                              | 2,987 |
|                                                      |       |
| Number of returns from the mail ballot               | 3,083 |

On the basis of the canvass of the votes cast, I certify that the following persons have been duly elected to the respective offices:

President (for a term of one year)

Morris A. Copeland

Vice-Presidents (for a term of one year)

Ben W. Lewis

Joseph J. Spengler

Members of the Executive Committee (for a term of three years)

Solomon Fabricant Faith M. Williams

After the announcement of the election results, the retiring president, E. E. Witte, presented President-elect M. A. Copeland, who responded with an expression of deep appreciation of the honor and responsibilities pertaining to the office.

There being no unfinished business, the new President called for any items of new business. From the floor, it was suggested that we make special efforts this year to find new names and faces for the program and that one way of accomplishing this result would be to distribute very early a preliminary draft of the program to chairmen of departments (Exhibit II of the *Directory*), with a request that they send suggestions of names of participants as well as subject-matter items for the program.

There being no further items of new business, the President called for the report of the Resolutions Committee, which was presented by Professor T. J. Kreps and approved unanimously:

The Association is greatly indebted to President Edwin E. Witte, who bore the major responsibility for the preparation of the program of this annual meeting, and to the

members of the Executive Committee and others who so ably assisted him in this diffi-

cult and time-consuming task.

The Association expresses its thanks to all members of the Local Arrangements committee and subcommittees: C. Austin Barker, Chairman, Donald S. Thompson, Vice-Chairman, Ralph H. Benedict, Treasurer, and George W. Sanford, Secretary; S. Sterling McMillan, Chairman of the Printed Program Subcommittee, Dallas M. Young, Chairman of Program Facilities Subcommittee, John W. Love, Chairman of the Public Relations Subcommittee, Daniel J. Deady, Chairman of the Registration Subcommittee, John M. Gersting, Chairman of the Information Subcommittee, William P. Carlin, Chairman of the Fee Events Subcommittee, and Donald P. Smith, Chairman of the Employment Register. Special appreciation is also due to the various local institutions and corporations which have released certain personnel to serve in various administrative capacities to make our meeting a success and most pleasant. The Cleveland Electric Illuminating Company, The Federal Reserve Bank of Cleveland, The Republic Steel Corporation and Western Reserve University merit special commendation. The Association is grateful to the press and other agencies of communication for their coverage of the proceedings and thanks the management and staff of the Hotel Cleveland for what it did towards accommodating the meetings and the delegates and visitors. Despite the unforeseen difficulties of weather conditions and the late timing of arrivals, the hotel was able to obtain accommodations for members.

Acknowledgment is also made of the co-operation of other professional organizations meeting simultaneously in this city in making a co-ordinated and constructive joint

program.

Finally, the Association extends its sincere thanks to its able and conscientious Secretary, James Washington Bell, and his staff for their continued and very effective contribution to the arrangement of these annual meetings.

Theodore J. Kreps, Chairman J. M. Buchanan William D. Ross

The meeting was adjourned at 5:45 P.M.

JAMES WASHINGTON BELL, Secretary,

### REPORT OF THE SECRETARY FOR THE YEAR 1956

The minutes of the Executive Committee are a record of the official acts of the Association and the minutes of the spring and December, 1956, meetings are presented below. A summary of the year's operations, with comments and interpretations concerning the Association's activities, follows these minutes.

### MINUTES OF EXECUTIVE COMMITTEE MEETINGS

1. Minutes of the spring meeting held in Rye, New York, March 23-24, 1956:

The second meeting of the 1956 Executive Committee was held at the Westchester Country Club, Rye, New York, March 23-24, 1956. The following were present: E. E. Witte, presiding, and J. W. Bell, J. D. Black, W. J. Fellner, Milton Friedman, B. F. Haley, P. T. Homan, C. B. Hoover, Fritz Machlup, Ruth Mack, R. A. Musgrave, and G. J. Stigler. Absent were: N. S. Buchanan and Simon Kuznets. Attending as members of the Nominating Committee were: Jacob Viner, M. K. Bennett, E. B. George, R. B. Heflebower, and Aryness J. Wickens (E. H. Chamberlin was absent); and as guests: J. P. Miller and Paul Webbink.

1. President's Remarks (E. E. Witte). The meeting was called to order at 10:00 A.M. President Witte circulated copies of program suggestions with the request that members peruse them in advance of the discussion of this matter (item 10). He then outlined the order of business and the procedure to be followed in the two-day meeting. (The

Nominating Committee was in session at this same time.)

2. Minutes. The minutes of the December 28 and 30, 1955, Executive Committee

meetings were approved with minor corrections as distributed in page proof.

3. Report of the Secretary (J. W. Bell). The report of George Garvy, Chairman of the Local Arrangements Committee of the New York City meetings, was submitted and briefly discussed. The other topics taken up in the Secretary's report were: membership, publications (including the forthcoming 1956 Directory), office management, summary of committee activities, and the filling of the office of coursel. In the discussion of the Directory questionnaire, it was VOTED to establish an ad hoc committee to review the revised draft and report its findings. The draft was later submitted and approved as revised. The Directory contents—chiefly the Exhibits in the Appendix—were distributed and discussed, as was also the importance of ways and means of enlarging our membership so as to widen the coverage of the Directory.

4. Reports of the Treasurer and Finance Committee (J. W. Bell). No significant changes in the financial condition of the Association have taken place since Christmas. Other items reported were: a proposal from the American Farm Economic Association that we offer joint memberships in both associations at a reduced rate (not approved); putting into effect, in two steps, a new advertising rate schedule; and, finally, an analysis of our

investment portfolio as of March 5, 1956.

5. Report of the Managing Editor (B. F. Haley). Items reported and discussed were: (1) Expansion of the American Economic Review and the correspondence with editors of other economic journals on this matter. (2) The suggestion that a book review editor be appointed to lessen the burden of the Editor was not adjudged feasible by the Editor. Frofessor Haley announced the addition of short notes on books, government documents, etc., in the AER. (3) A panel of names suitable for nominations to serve on the Editorial Eoard was submitted. The choice of three nominees to fill vacancies is to be ratified at the December meetings.

6. Reports of Standing and Special Committees.

6a) Committee on Research and Publications (J. P. Miller). The Richard D. Irwin, Inc., report on the publications series sales and inventory was submitted. On behalf of the Committee, J. P. Miller recommended that we proceed with the preparation of two new volumes of the "Readings Series": VIII, "Industrial Organization," and IX, "Public Finance." Names of possible editors were suggested. It was VOTED to approve this recommendation. It was VOTED that the Committee be requested to report on the feasibility of preparing and publishing, at an early date, a volume of readings in economic growth and to report progress at the December meeting.

Consideration of the cumulative index of economic journals was revived and after

protracted discussion of three alternative proposals, the matter was referred back to the Committee for more specific estimates of costs and for suggestions of personnel to assist in making estimates of the cost of various proposals and perhaps carrying through the work thereafter. The Committee was asked to report back in December. The sum of \$500 was appropriated for this purpose.

It was announced that round table sessions at the December meetings were being prepared to develop the idea of "Economics in Action," the title of Gerhard Colm's

proposal.

A forty-page manuscript, prepared by Donald Irwin, was submitted, and three alternative proposals were made for its publication; viz., (1) as a supplement to the American Economic Review, (2) as part of the Review with 2,000 reprints for sale to those interested, and (3) printed separately (e.g., 3,000 copies) for sale at fifty cents a copy. On the basis of cost estimates submitted by B. F. Haley, it was VOTED that upon approval of the final manuscript by the Committee, we proceed according to plan "3." The sum of \$400 was appropriated to cover the anticipated deficit

\$400 was appropriated to cover the anticipated deficit.

New items in the "Translation Series" were discussed, e.g., Pareto's Cours and the Manuale, but no action was taken. It was VOTED that it is the sense of the Executive Committee that we are interested in seeing translations made of foreign economic classics, preferably by commercial publishers, but if they are not interested, then through some other media; and that we encourage the Committee on Research and Publications to keep on with its work in this field. Professor Stigler suggested that the AEA might reissue American economic writings in the manner of the Royal Economic Society publications

of British economic'classics.

6b) Committee on Economic Education (B. W. Lews). In the absence of B. W. Lewis, the Szcretary reported that the ad hoc Committee (B. W. Lewis, A. M. McIsaac, and P. J. Strayer), discharged at the December meeting, had been reconstituted by the President and enlarged by the addition of two new members: C. C. Bloom and F. A. Bond. The Committee has had no opportunity to meet as yet but its members are by correspondence attempting to formulate a definition of the Committee's functions. They have been helpful in drafting question 7 of the Directory questionnaire. It is hoped that the results of the questionnaire will provide a roster of useful names to assist in the Committee's activities. The Committee has asked for and has been accorded a session in the Cleveland meetings in December to deal with problems in economic education.

The prospectus of a new Journal of Economic Education was exhibited. An accompany-

ing letter from L. E. Leamer was read.

oc) Committee on International Co-operation (Gottfried Haberler); International Economic Association (H. S. Ellis). Members of the Committee on International Co-operation have expressed their belief that the functions of the Committee were largely fulfilled when the International Economic Association was finally launched. Hence their recommendation that the Committee be discharged was APPROVEL. Both representatives (Gottfried Haberler and H. S. Ellis) of the American Economic Association to the International Economic Association were re-elected for another term. Attention was called again to the International Economic Association Congress to be held in Rome early in September, 1956.

6d) Committee on Honors and Awards (N. S. Buchanan). No report of this Committee is due until the spring of 1957. (The Executive Committee minutes of the December,

1955, meetings were reviewed and corrected to indicate the date.)

6e) Committee on Foreign Honorary Members (W. W. Leontief). A letter from W. W. Leontief was read which indicated that he wished to be relieved of the chairmanship of this Committee in view of the reluctance of the Executive Committee to act on this Committee's recommendations. Further discussion of the filling of vacancies in our list of foreign honorary members confirmed the hesitancy of the Executive Committee to act at this time in making new selections. It was suggested that if a new committee be constituted, it should consider candidates solely on the basis of their interest and attainments rather than political considerations or public service. Motions were made and discussed but no action was taken.

6f) Nominating Committee (Jacob Viner). During the evening session, the Nominating Committee reported that it was ready to submit its slate of nominees and the two committees met as an electoral college to consider names for 1957 officers. The nominee for the presidency was first agreed upon and the successful candidate was invited by telephone to accept the invitation. After this was accomplished, the panel of names for vacarcies in the council representatives (SSRC and NBER) and for the other nominees for vice-presidents and members of the Executive Committee were discussed and agreed

upon and the Nominating Committee retired to finish its work.

7. Reports of Council Representatives. 7a) ACLS (F. H. Knight). No report.

7b) SSRC (J. P. Miller). No further developments to report since the Christmas meeting. (Paul Webbink was present but had no report to make.) William H. Nicholls, of Vanderbilt University, was selected as our representative for the term 1957-59. 7c) NBER (J. H. Williams). No report.

8. Annual Meetings. It was decided that the dates for the 1956 meeting in Cleveland would be December 27-29. The schedule for following years is: 1957, Pailadelphia, Eellevue-Stratford Hotel, December 28-30 (unless headquarters are shifted to the Sheraton Hotel); 1958, Chicago, Palmer House, December 27-29; 1959, Washington, D.C., Sheraton-Park and Shoreham Hotels, December 28-30; 1960, New Orleans, Louisiana, if arrangements can be made; 1961, New York City, December 27-29, if this meets with the approval of the other associations of the allied social science group.

9. Miscellaneous and Unfinished Business. In connection with the Hamilton report on retirement income for Miss Tait and Miss Merriam, it was recommended that, since they both are carrying annuities, the Association's contribution of 71/2 per cent be applied to

these without a corresponding deduction from their salaries.

No decision was reached as to a successor for John E. Walker as counsel for the Association.

A proposal suggested by Frank C. Pierson to E. E. Witte was not reported due to oversight. He proposed that the AEA adopt a Congressional intern program such as the

one now operated by the American Political Science Association. 10. New Business. The balance of the session was devoted to the discussion of the

program for the 1956 meeting.

The meeting was adjourned at 12:30 P.M.

2. Minutes of the Christmas meetings held in Cleveland, Ohio, December 27 and 29, 1956:

The third meeting of the 1956 Executive Committee was called to order at 10:00 A.M., December 27, E. E. Witte presiding. Others present were: J. W. Bell, N. S. Buchanan, W. J. Fellner, B. F. Haley, C. B. Hoover, Fritz Machlup, and Ruth Mack. Guests present were: M. A. Copeland, Solomon Fabricant, B. W. Lewis, and Faith Williams; and reporting as representatives: R. A. Gordon and W. L. Thorp. Absent were: J. D. Black.

Milton Friedman, Paul T. Homan, Simon Kuznets, R. A. Musgrave, and G. J. Stigier.

The first meeting of the 1957 Executive Committee was held on December 29, at 6:00 P.M. M. A. Copeland presiding. Others present were: J. W. Bell, Solomon Fabricant, B. F. Haley, B. W. Lewis, Fritz Machlup, Faith Williams, and E. E. Witte. Absent were: W. J. Fellner, Milton Friedman, Simon Kuznets, Ruth Mack, R. A. Musgrave, and J. J. Spengler.

The account of the proceedings given below does not follow the chronological order of business as transacted but treats in sequence the items as they were listed on the agenda.

1. President's Remarks (E. E. Witte). In calling the meeting to order, President Witte outlined the procedure to be followed, calling attention to the desirability of considering first those items necessary to wind up this year's business before taking up items which could be tabled for consideration by the 1957 Executive Committee.

2. Minutes. The minutes of the March 23-24, 1956, meeting, held at Westchester Coun-

try Club, Rye, New York, were approved with minor corrections.

3. Report of the Secretary (J. W. Bell). A rather full report was made of the operations of the Secretary's Office in view of the major undertaking this year of preparing and publishing the 1956 Directory. This extra load has taxed our staff and facilities beyond capacity. As indicated in our preliminary announcement, we made every effort to enlarge our membership so as to widen the coverage of the economists of the country as much as possible. In line with this effort, we processed several lists of names, with gratifying results. Perhaps the bulk of the one thousand new names added to our rolls may be attributed to this circularization. The figures showing composition and growth of membership can be found in Exhibit II following this report.

Matters pertaining to the photograph and biographical sketch series appearing in the American Economic Review, exchange advertisements, advertising rates, and permission to reprint and translate were discussed; estimates were given on the size and cost of the forthcoming 1956 Directory and the May, 1957, Papers and Proceedings. The status of the publications series—"Survey," "Readings," and "Translations"—was briefly alluded to. We still have an over-all deficit of some \$7,500 on the balance of these publications, which will much more than be made up from the sale of existing inventories.

A detailed accounting will be presented at the spring meeting.

Copies of the 1956 information booklet were distributed. Some four thousand copies of this booklet were mailed out during the past year.

4. Reports of the Treasurer, Finance Committee, and Auditor (J. W. Bell). Copies

of the balance sheet and of the income and expense statement, a list of our investment holdings, and a copy of the auditor's report were zirculated for inspection. Our cash position, income and expenses, our assets and liabilities and unappropriated surplus were explained, item by item. We are still able to keep up with our increasing expenses by virtue of larger incomes from dues and subscriptions, advertising, and nonrecurring items such as profit on sales of securities and surplus from annual meetings. It was pointed out that heavy Directory costs now accruing will not appear until next year's statement. The reports were accepted, with a vote of thanks to the members of the Finance Committee (Roy C. Osgood, C. Wells Farnham, and James Washington Bell) and to David Himmelblau & Company, our auditor. It was VOTEL to re-elect the present incumbents, named above, for another year, and the Secretary was instructed to write letters of appreciation to these members, expressing the thanks of the Association for conscientious

and effective service. No change in membership dues or subscription rates is contemplated.

5. Report of the Managing Editor (B. F. Haley). The main facts concerning size, content, classification of articles, printing costs, and budget are presented in six tables of the report (see below). After a discussion of editorial problems and policies, it was VOTED to approve the three nominees submitted by the Managing Editor to membership on the Editorial Board: Neil W. Chamberlain, Evsey D. Domar, and Thomas C. Schelling. It was VOTED to approve the new printing contract with George Banta Company. This contract involves a 10 to 11 per cent increase over the 1951 contract and is the third boost in costs since the war. The Treasurer was authorized to inquire about printing costs in other establishments. A proposed revision of the scale of charges for reprints was discussed. No action was taken but prevailing sentiment was opposed to the modification suggested in the form of the reprints and the statement was made that Banta should be asked to absorb the extra costs in view of the higher rates for printing the Review quoted in the new contract.

The Editor's budget for 1957 was approved. A \$200 increase was VOTED in Miss Doris Merriam's salary and the Secretary was authorized to increase Miss Gertrude Tait's salary by like amount. The Editor called attention to Article IV, Section 5, of our Charter and Bylaws and suggests that it be changed to accord with the facts.

6. Reports of Standing and Special Committees.

6a) Committee on Research and Publications (J. P. Miller). In the absence of Professor Miller, the Secretary read his brief report. The memorandum sent by Professor Miller to all members of the Executive Committee and containing the report of Mrs. Do othy Livingston, formerly of the Catalogue Department of Yale Library, was described but put on the table for further discussion at the spring meeting. Other projects mentioned were also tabled.

6b) Committee on Economic Education (B. W. Lewis). Professor Lewis was present and after presenting an account of the activities of this Committee, submitted an invitation from the Joint Council on Economic Education. It was VOTED to accept their invita-tion to name three representatives as members of the Board of Trustees of the Joint Council. The Chairman also indicated that the Committee would presently recommend that it be enlarged to include a sixth member in order to increase its effectiveness.

6c) IEA Representatives. No report.

6d) Committee on Foreign Honorary Members. No report.

6e) Committee on Honors and Awards. Replacements for the members whose terms expired in 1956 were discussed. The committee is to be fully constituted as soon as possible and given instructions to submit their report with recommendations for the F. A. Walker and J. B. Clark awards at the spring meeting of the Executive Committee.

6f) Nominating Committee. Professor Copeland announced that he had selected Professor Eveline M. Burns as Chairman of the Nominating Committee. A large number of names were suggested, which will constitute a panel from which the other members are to be selected. A listing in the order of their choice was made for the guidance of the President.

7. Reports from Council Representatives.

7a) ACLS (F. H. Knight). Report to be published.
 7b) SSRC (R. A. Gordon). A brief report was read. See below.

7c) NBER (W. L. Thorp). Report was read. See below.

8. Annual Meetings. The time and place of future meetings was reconsidered and firm commitments were authorized where options were previously held. The schedule is as follows:

Philadelphia, December 28-30, Sheraton Hotel 1957

1958 Chicago, December 27-29, Palmer House

- Washington, D.C., December 28-30, Sheraton-Park and Shoreham Hotels
- 1960 New Orleans, December 28-30, Roosevelt Hotel 1961 New York City, December 27-29, Commodere Hotel

Drs. Karl R. Bopp and Clay J. Anderson have accepted our invitation to serve as cochairmen of the Local Arrangements Committee for the Philadelphia meetings in 1957.

The Conference of Secretaries of the Allied Social Science Associations held their usual breakfast but there were no matters of importance to report.

9. Unfinished Business.

9a) The reconstitution of the Committee on the Status of the Profession was debated and establishment of a new committee was proposed, the title being Committee on Academic Freedom and Civil Liberties. The following appointments were made: Fritz Machlup, Chairman, three-year term; Howard R. Bowen, two-year term; Richard B. Heflebower, one-year term. The Committee is charged with the responsibility of reviewing alleged infringements upon the academic freedom or civil liberties of economists and to submit reports which may be supplemented by such general observations and recommendations concerning the status of the profession and the Association's relation thereto as might promise to be fruitful.

9b) Consideration was given to a proposal to amend our bylaws to provide for insuring the election of a Canadian vice-president either every year or alternate years. The proposal was not approved, on the ground that even the Canadians would be opposed

to special consideration for special groups.

9c) The Congressional intern program for political scientists and economists was deemed to be more in the interests of the former than the latter and this matter was dropped.

10. New Business.

10a) Time and place of spring meeting. It was decided to hold the spring meeting of the Executive Committee at Westchester Country Club, if available, March 29-30, 1957. Other meeting places were suggested as alternates.

10b) The selection of an Association counsel as successor to the late John E. Walker

has not yet been made.

10c) The balance of the meeting on December 29 was devoted to a consideration of Professor Copeland's suggestions for the 1957 program and the selection of participants and criticisms of our procedures, such as represented in the Gottlieb correspondence, the Fusfeld communication in the September American Economic Review, and the letter frem John D. Clark. Favorable opinion was expressed about a tentative proposal for open competition in connection with next year's program.

The meeting adjourned at 10:00 P.M.

### ACTIVITIES AND OPERATIONS

The following account presents a brief description of our operations; i.e., meetings, publications, committee activities, relations to other associations, councils, and so forth, here and abroad.

Annual Meetings. Attendance at the Cleveland meetings was large. Registration figures for associations meeting with us are shown in the following table:

| ~~ |     | ~~  | •     | •  |
|----|-----|-----|-------|----|
| Ho | tΔl | Cle | 17010 | md |
|    |     |     |       |    |

| American Economic Association               | 1,499 |
|---------------------------------------------|-------|
| Econometric Society                         | 201   |
| American Finance Association                | 250   |
| American Association of University Teachers |       |
| of Insurance                                | 106   |
| Industrial Relations Research Association   | 339   |
| Regional Science Association                | 69    |
|                                             | 2,464 |
| Statler Hotel                               | ·     |
| American Farm Economic Association          | 104   |
| Manger Hotel                                |       |
| American Marketing Association              | 227   |
|                                             | 2,795 |

The total of paid registrations was 2.529.

The nineteen sessions which we are to publish in the *Papers and Proceedings* will make another large volume of about 650 pages.

Criticism of the membership poll of December, 1955, as published in the Appendix to the Secretary's Report (*Papers and Proceedings*, 1956), chiefly on the grounds that though part of our membership is in the South and West, we rarely meet away from the Atlantic Seaboard or the North Central and Chicago areas, is being partly met by our plan to meet in New Orleans in 1960.

Membership. See Exhibit II for membership and subscription statistics. The net gain (895 members and 172 subscribers) is a substantial increase and compares with about 200 per year for the past several years. The results are due primarily to a mail membership drive conducted by the Secretary's Office in connection with the 1956 Directory, the object of which was to induce as mary economists as possible to join the Association in time to be included in the "who's who" descriptions. The response to this invitation has been gratifying, both with respect to increased membership and to the questionnaires returned.

The 1956 Directory. The major efforts of the Secretary's staff have been devoted to the processing of the questionnaires and the preparations for the Directory. We have attempted to do this magnum opus with only a slightly enlarged staff along with the expanded routine operations resulting from the membership campaign and the increased membership. We have been handicapped by an embarrassing turnover in clerical help; hence, progress has been unexpectedly slowed up and more costly than it would have been had we been able to carry on without interruption with a trained personnel. We anticipate no further undue delays and hope to complete the job by April, 1957, when the 650-pages-plus volume will be issued as a separate number. The magnitude of this task has become such that we are of the firm conviction that the next Directory will have to be a special project, to be undertaken apart from the routine operations of the Secretary's Office and probably with outside financial help. The description of the volume as presented in the advance announcement is substantially correct and need not be repeated here.

Fublications.

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American Economic Review. The Managing Editor's report describes the size, contents, and budget for the American Economic Review, the activities of the Editor's Office, and the Editorial Board, etc.

We have now caught up with the photograph and biographical sketch series of past presidents, past secretaries, treasurers, and editors. Photos of current presidents will appear as usual in the March number of the *Review*, along with the presidential address. We contemplate publishing the pictures of the F. A. Walker and J. B. Clark medalists next.

We continue to receive requests for the publication of "Vacancies and Applications" for positions. This section apparently serves a useful purpose.

The use of our mailing list has been more freely granted as the legitimate demand increases. We are contemplating the installation of our own addressing system, thereby relieving our publishers of this profitless function and providing us with the means of introducing a classification of names. We believe that a real educational service is performed in informing our members

of worth-while publications and useful information and that this function can be improved by availing our clientele of selective lists for special purposes, while at the same time making the operation profitable to the Association.

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Permission to reprint and translate articles and papers from our publications is requested with increasing frequency and we are pursuing a liberal policy in all cases where new and wider outlets warrant such permission.

Papers and Proceedings. The May, 1956, volume again exceeded preliminary estimates in size and cost. We find it increasingly difficult to keep the Papers and Proceedings within manageable proportions.

Information Booklet. This sixteen-page description of the purposes and activities of our Association has proved particularly useful in connection with the membership drive. A reprinting was necessary and some four thousand copies were distributed to officers, committee members, and to prospects receiving invitations to membership. These booklets are available upon request.

Committee Activities. The members of all standing and ad hoc committees are listed at the end of this report.

Committee on Research and Publications (J. P. Miller, Chairman). This Committee reports progress on their major projects now under way, viz.: (1) Listing of available bibliographies in economics. (2) The preparation of three additional volumes of readings ("Public Finance," "Industrial Organization and Public Policy," and "Economic Development"). And (3) the publication of a cumulative index of economic journals in the English language. The first of these projects is nearing completion; the readings volumes are in the initial stages of preparation; and we are still estimating costs of the index project in its various forms.

A carefully prepared report on "Cost Estimates for a Proposed Index of Economic Journals," by Mrs. Dorothy Livingston, formerly of the Catalogue Department of Yale Library, summarizes the results of a questionnaire, lists the journals included in the sampling and others mentioned, shows what indexes, including self-indexes, now cover such journals and over what periods of time, and indicates probable costs of the project on the basis of different assumptions; i.e., selections of journals and time periods. The cost of indexing the American Economic Review alone (1911-60, an estimated 175 pages) is not stated but probably would amount to \$7,500; but a 500-page volume covering thirteen journals in general economics from 1931 to 1960 would amount to \$21,640; and from 1886 to 1960 (320 pages) would be \$37,300. All journals (general, business and special, and historical), 1931-60 (950 pages) would cost \$37,575; all journals, 1886-1960 (1,310 pages) would cost \$55,735. Various combinations are presented.

We have expressed an interest in at least that part of the larger project which involves a cumulative index of our own publications from 1911 to date. That much would indeed be a contribution which would seem to warrant the expenditure of our members' money. An even greater service would be rendered to the profession, to the social sciences, and to education at large if a wider coverage could be undertaken at the same time, with less than pro-

portionate increase in expense. An increase in member dues might even be justified in order to obtain these benefits. However, such a proposal raises complications such as the effect of increased dues on the size of the membership. If this worthy project were given a wider hearing, it would seem that outside aid might be forthcoming. Certainly, some of the foundations might be approached, since the objective falls well within the scope of promotion of education and research in economics and the social sciences as well as the humanities.

Committee on Economic Education (B. W. Lewis, Chairman). The ad hoc Committee has been reconstituted and enlarged as a standing committee. The report presented at the December meeting is printed below.

Committee on International Co-operation (discontinued). Representatives to the IEA will have a report on the International Congress at Rome, September 6-11, 1956.

Committee on Honors and Awards (N. S. Buchanan, Chairman). (See report.) New chairman and new members to succeed those whose terms expire December, 1956, need to be appointed.

Committee on Honorary Members. This Committee needs to be reconstituted unless allowed to die.

Committee on the Status of the Profession. Standing committee not appointed. No reports. This Committee was discharged in March, 1955.

Committee on the Implementation of the Bowen Report. No further developments.

Reports of Council Representatives. The reports of F. H. Knight (ACLS), R. A. Gordon (SSRC), and W. L. Thoro (NBER) are printed below.

### Committees Appointed During the Year

Committee on Elections
Marshall D. Ketchum, Chairman
William C. Bradford
James Washington Bell

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COMMITTEE TO SELECT FOUR YOUNG
U.S. ECONOMISTS TO ATTEND OXFORD
NATO SEMINAR
Gottfried Haberler, Chairman
Eoy Blough
P. T. Ellsworth

Nominating Committee
Jacob Viner, Chairman
Merrill K. Bennett
Edward H. Chamberlin
Edwin B. George
Richard B. Heflebower
Aryness Joy Wickens

FINANCE COMMITTEE
ROY C. Osgood, Chairman
C. Wells Farnham
James Washington Bell

### Standing Committees and Representatives

COMMITTEE ON ECONOMIC EDUCA-

Ben W. Lewis, Chairman Clark C. Bloom

Floyd A. Bond Archibald McIsaac Paul J. Strayer Committee on Honors and Awards Norman S. Buchanan, *Chairman* (1956)

(1956)
Fritz Machlup (1956)
Edward S. Mason (1958)
W. Blair Stewart (1958)
J. Douglas Brown (1960)
Jacob Marschak (1960)

COMMITTEE ON RESEARCH AND PUBLICATIONS

John P. Miller, Chairman (1958)
D. Gale Johnson (1956)
R. A. Gordon (1957)
Willard Thorp (1960)
Max F. Millikan (1956)
Alexander Gerschenkron (1957)
Arnold C. Harberger (1958)
James Washington Bell, Ex Officio

American Council of Learned Societies

Frank H. Knight (1958)

International Economic Association Representatives Howard S. Ellis (1961) Gottfried Haberler (1961)

NATIONAL BUREAU OF ECONOMIC RESEARCH

Willard Thorp (1960)

Social Science Research Council D. Gale Johnson (1956) R. A. Gordon (1957) John P. Miller (1958)

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REPRESENTATIVE TO UNESCO Calvin B. Hoover

Representatives of the Association on Various Occasions

American Academy of Political and Social Science Meeting Raymond T. Bye

Howard M. Teaf, Jr.

PACE COLLEGE SEMICENTENNIAL YEAR

Emanuel Stein

MARQUETTE UNIVERSITY 75TH ANNIVERSARY

Robert J. Barr

NORTHEASTERN UNIVERSITY, DEDICATION OF CLASSROOM-LABORATORY BUILDING

Charles A. Meyers

THE 1960 CENSUS ADVISORY COMMITTEE

Morris A. Copeland

NATIONAL CONFERENCE ON HOUSING CENSUS

Sol Klaman

INAUGURATION OF UNIVERSITY AND COLLEGE PRESIDENTS

Samuel Milton Nabrit, Texas Southern University

Eugene H. Hughes

Grellet Collins Simpson, Mary Washington University

Tipton R. Snavely

Warmoth Thomas Gibbs, Agricultural and Technical College of North Carolina

Milton S. Heath

Louis Melbourner Hirshson, Hobart and William Smith Colleges George P. Adams, Jr.

Robert Eli Long, Park College

Norman Sun

### Use of the Mailing List

The following were granted permission to use our mailing list to send the material indicated:

MERRILL FOUNDATION FOR ADVANCEMENT OF FINANCIAL KNOWLEDGE: To send report on program and activities.

ACADEMY OF POLITICAL SCIENCE: To solicit memberships.

ECONOMETRIC SOCIETY: To solicit memberships.

COMMITTEE FOR ECONOMIC DEVELOPMENT: To send policy and program statements.

LIVERPOOL UNIVERSITY PRESS: To build up a list for distribution of their catalogue.

University of Michigan, Bureau of Business Research: To send circular on *The Detroit Money Market*, 1934-55, by G. Walter Woodworth.

PRINCETON UNIVERSITY PRESS: To send catalogue of their NBER publications.

University of Chicago Press: To send special subscription offer for *Journal* of *Political Economy*.

University of Michigan, Mental Health Research Institute: To send out circular on their journal, Behavioral Science.

Kelley & Millman: To send 1957 catalogue.

NATIONAL ASSOCIATION OF MANUFACTURERS: To send The Timing of High Rate Reduction; also Facing the Issue of Income Tax Discrimination.

NATIONAL PLANNING ASSOCIATION: To send information regarding The Employment Act, Past and Future and membership in the NPA.

INSTITUTE OF LIFE INSURANCE: To send 1956 Life Insurance Fact Book.

UNIVERSITY OF ILLINOIS, BUREAU OF ECONOMIC AND BUSINESS RESEARCH:
To send notices of their publications.

INTERNATIONAL ECONOMIC ASSOCIATION: To send announcements of Rome Congress, September, 1956, and list of publications.

AMERICAN INSTITUTE FOR ECONOMIC RESEARCE: To send copies of Current Economic Trends and Useful Economics.

SHINNER FOUNDATION: To send Arresting Slums Through Private Enterprise.

AMERICAN STATISTICAL ASSOCIATION: To announce local meeting (Illinois, Indiana, Michigan, and Wisconsin members).

GENERAL ELECTRIC COMPANY: To send 1955 General Electric Annual Report. STUDEBAKER-PACKARD CORPORATION: To send progress report, Formula for Growth.

Institute of Life Insurance: To send reprint of C. C. Nash's article from International Labor Review.

WILLIAM MORROW & COMPANY: To send circulars about World Without Barriers, by Emanuel R. Posnack.

Atlantic Monthly: To send subscription offer.

Saturday Review: To send subscription offer.

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Respectfully submitted,

JAMES WASHINGTON BELL, Secretary

EXHIBIT I PUBLICATION COSTS

| •            | Papers and Proceedings |                     |                         |                    | H ANDBOO            | KS .             |
|--------------|------------------------|---------------------|-------------------------|--------------------|---------------------|------------------|
| Year*        | Number<br>of Pages     | Number<br>of Copies | Cost                    | Number<br>of Pages | Number<br>of Copies | Cost             |
| 1930<br>1931 | 222<br>308             | 4,300<br>4,300      | \$ 1,353.91<br>1,919.18 | 88                 | 4,200               | \$ 589.54        |
| 1932         | 316                    | 4,200               | 1,819.75                |                    | 1,200               | • 005,02         |
| 1933         | 216                    | 4,000               | 1,284.85                | 88                 | 3,900               | 522.71           |
| 1934         | 232                    | 3,700               | 1,192.91                | ·                  | •                   |                  |
| 1935         | 248                    | 4,000               | 1,347.88                | •                  |                     |                  |
| 1936         | 360                    | 4,200               | 2,037.90                | 58                 | 4,100               | 454.36           |
| 1937         | 344                    | 4,300               | 1,922.03                | -                  |                     |                  |
| 1938         | 200                    | 4,500               | 1,234.10                | 112                | 4,500               | 1,118.84†        |
| 1939         | 288                    | 4,600               | 1,785.91                |                    |                     | 000 50           |
| 1940         | 444                    | 4,900               | 2,658.12                | 108                | 5,000               | 822.58           |
| 1941         | 479                    | 5,200               | 3,294.45                | 200                | F 500               | 4 885 801        |
| 1942         | 548                    | 5,400               | 3,909.79                | 208                | 5,500               | 1,775.72†        |
| 1943         | 535                    | 5,500               | 3,652.56                | ·                  |                     | }                |
| 1944         | 470<br>144             | 5,800               | 3,350.40                | ł                  |                     |                  |
| 1945         | 536                    | 5,900               | 1,215.22‡               |                    |                     |                  |
| 1945         | 960                    | 6,400<br>6,700      | 4,502.84<br>8,149.90    | 143                | 6,900               | 2,035.71         |
| 1947         | 781                    | 7,700               | 8,140,79                | 143                | 0,900               | 2,033.71         |
| 1948         | 591                    | 8,500               | 8,701.41                | 345                | 7,700               | 6,948.06†        |
| 1949         | 537                    | 9,500               | 7.844.50                | J 545              | 1,100               | 0,710.50         |
| 1950         | 650                    | 10,100              | 9,864.76                | 41                 | 9,200               | 1,163.84†        |
| 1951 .       | 816                    | 10,400              | 11,965.40               | 18                 | 8,300               | 692.63           |
| 1952         | 768                    | 10,700              | 13,190.83               | 11                 | 8,188               | 620.09†          |
| 1953         | 612                    | 10,900              | 10,935.98               | 187                | 8,400               | 4,416.69         |
| 1954         | 765                    | 11,000              | 13,932.96               | 11                 | 7,900               | 660.06†          |
| 1955         | 711                    | 11,000              | 12,900.41               | 8                  | 8,000               | 540.2 <u>1</u> † |
| 1956         | 651                    | 11,200              | 12,115.97               |                    |                     |                  |

<sup>\*</sup> This is the year of publication and pertains to the meeting of the preceding year. The figures are published in the subsequent year.

† "Who's who" volumes; 1950—"Who's who" supplement; 1951 on—names and addresses supplement.

‡ Part of papers presented at annual meeting published as supplement to June number.

EXHIBIT II MEMBERS AND SUBSCRIBERS

|                                         | Totals<br>11/30/55                     | Added                          | ∃emoved         | Gain<br>or<br><i>Loss</i> | Totals<br>11/30/56               |
|-----------------------------------------|----------------------------------------|--------------------------------|-----------------|---------------------------|----------------------------------|
| Class of membership: Annual             | 6,922<br>363<br>122<br>56<br>.74<br>18 | 1,075*<br>467†<br>16<br>4<br>7 | 363§ 297* 9 2 3 | 712<br>170<br>7<br>2<br>4 | 7,634<br>533<br>129<br>58‡<br>78 |
| Total members Subscribers Complimentary | 7,555<br>2,962<br>1                    | 1,569<br>620                   | 674<br>447<br>1 | 895<br>173<br>1           | 8,450<br>3,135                   |
| Totals                                  | 10,518                                 | 2,189                          | 1,122           | 1,067                     | 11,585                           |

<sup>\*</sup> Includes 103 junior members changed to annual.
† Includes 13 annual members changed to junior.
‡ Includes 12 who do not receive publications.
§ Resigned, 84; nonpayment, 107; died, 26; lackfof\_address, 73; changed to junior, 13.

# REPORT OF THE TREASURER FOR THE YEAR ENDING NOVEMBEE 30, 1956

Financial results for the past fiscal year compared with last year and fiv years ago are shown in the tables below. The first table shows income an expense operations and the second the comparative financial conditions.

### COMPARATIVE RESULTS OF OPERATIONS FOR 1951, 1955, AND 1956

|                                                                                                                           | 11/30/51                                      | 11/30/55                                    | 11/30/56                                    |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------|---------------------------------------------|
| Income  Membership dues. Subscriptions. Sales. Advertising. Sundry income. Republications income.                         | \$39,812<br>15,553<br>2,251<br>7,424<br>1,854 | \$43,556<br>17,387<br>2,532<br>7,017<br>104 | \$47,646<br>17,852<br>2,908<br>11,128<br>78 |
| Dues and publications income                                                                                              | \$66,894                                      | \$70,596                                    | \$79,612                                    |
| Interest. Dividends. Less custodian fees. Sales of securities (net)                                                       | \$ 1,025<br>4,608<br>157<br>2.788             | \$ 1,750<br>3,003<br>218<br>11,621          | \$ 1,770<br>3,337<br>249<br>386             |
| Investments (less fees)                                                                                                   | \$ 8 265                                      | \$16,156                                    | \$ 5,244                                    |
| • Total income                                                                                                            | <b>\$</b> 75 159                              | \$86,752                                    | \$84,856                                    |
| Expenses  Office salaries. Other administrative expenses.  Annual meeting. Executive Committee. Other committee expenses. | \$12.735<br>3.604<br>501<br>1.016<br>533      | \$16,821<br>4,538<br>626<br>1,578<br>885    | \$23,040<br>6,234<br>1,861<br>1,426<br>801  |
| Administrative and operating expenses                                                                                     | \$18,439                                      | \$23,196                                    | \$29,640                                    |
| Review printing Papers and Proceedings Directory printing. Handbook printing. Editorial office (Review):                  | \$20,255<br>11,955<br>693                     | \$25,822<br>12,900<br>—<br>540              | \$28,164<br>12,116<br>479<br>—              |
| Contributors Editorial and clerical salaries Other expenses (net)                                                         | 1,654<br>7,785<br>553                         | 2,422<br>10,431<br>62                       | 2,427<br>11,529<br>237                      |
| Publications                                                                                                              | \$42,905                                      | \$52,053                                    | \$54,478                                    |
| Total expenses                                                                                                            | \$61,381                                      | \$75,249                                    | \$84,118                                    |
| Net operating income or loss                                                                                              | \$13,815<br>1,100                             | \$11,503                                    | <b>\$</b> 738                               |
| Net income or deficit                                                                                                     | \$12,715                                      | \$11,503                                    | \$ 738                                      |

Financial Operations. Income from all sources is listed as are all expenses. This grouping differs from the treatment in the Auditor's Report, where administrative operations and publication results are separated. Details are omitted and figures are given in round numbers.

Total income from all sources amounted to \$84,856 compared to \$86,752 for 1955, a decrease of \$1,896. The decrease is accounted for in the "sales of securities" item (nonrecurring), which amounted to \$11,621 in 1955 and only \$386 in 1956. All other items of income have increased, dues and advertising quite substantially.

Expenses have also increased, both administrative and operating and publishing costs. The former have increased about \$6,400 and the latter \$2,500, a total of \$8,900. Total expenses for 1956 of \$84,118 compare with \$75,249 for 1955.

Total income for 1956 of \$84,856 leaves a balance of net income of \$738 after deducting expenses of \$84,118—this despite the difference in profits on sales of securities. The favorable black figure is, however, more apparent than real, since only \$479 *Directory* expense has accrued thus far on a 640-page volume which will probably cost \$17,000-\$20,000 in printing costs alone.

COMPARATIVE FINANCIAL CONDITION FOR 1951, 1955, AND 1956

|                                                                                                            | 11/30/51                                                     | 11/30/55                                                         | 11/30/56                                                  |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------|
| Assets Cash on deposit and on hand                                                                         | 2.668                                                        | \$ 6,891<br>3,953<br>1,082<br>1,718                              | \$ 5,997<br>5,667<br>841<br>1,894                         |
| Stocks                                                                                                     | 49,764                                                       | 59,395                                                           | 60,237                                                    |
| Total assets                                                                                               | \$112,909                                                    | \$148,409                                                        | \$150,006                                                 |
| Liabilities and Funds  Accounts payable                                                                    | \$ 6,031<br>7,383<br>855<br>7,172<br>2,204<br>2,243<br>5,650 | \$ 8,604<br>8,418<br>369<br>38<br>882<br>—<br>7,900<br>\$ 26,211 | \$ 8,154<br>9,750<br>64<br>502<br>—<br>8,600<br>\$ 27,070 |
| Surplus  Balance at beginning of period.  Transfers from life memberships.  Net income or loss for period. | \$ 68,606<br>50<br>12,715                                    | \$110,170<br>525<br>11,503                                       | \$122,198<br>738                                          |
| Unappropriated surplus                                                                                     | \$ 81,371                                                    | \$122,198                                                        | \$122,936                                                 |
| Total footings                                                                                             | \$112,909                                                    | <b>\$148,409</b>                                                 | \$150,006                                                 |

### INVESTMENT PORTFOLIC

|                  | AT PAR   |             | Cost        | Market       |                     |
|------------------|----------|-------------|-------------|--------------|---------------------|
| Year             | Bonds    | Bonds       | Stocks      | Total        | Stocks and<br>Bonds |
| 1925             | \$25,000 | \$24,661.75 |             | \$ 24,661.75 |                     |
| 1930             | 31,000   | 32,439.48   |             | 32,439.48    | į                   |
| 1933             | 33,500   | 32,962.48   | \$ 3,954.23 | 36,916.71    | \$ 31,522.50        |
| 1935             | 16,000   | 15,280.48   | 28,114.50   | 43,394.98    | 50,338,72           |
| 1940             | 25,000   | 22,519.80   | 41,155.95   | 63,675.75    | 60,553.88           |
| 1942             | 27,000   | 24,651.12   | 41,556.06   | 66,207.18    | 58,211.88           |
| 1945             | 40,000   | 36,705.95   | 44,955.81   | 81,661.76    | 103,574.76          |
| 1948             | 35,000   | 33,108.63   | 48,624.14   | 81,732.77    | 84,841.91           |
| 1950             | 35,000   | 33,108.63   | 51,978.53   | 85,087.16    | 104 .177 .27        |
| 1951             | 43,000   | 43,340.16   | 49,764.51   | 93,104.67    | 117,316.75          |
| 1952             | 42,000   | 42,312.67   | 58,934.00   | 101,246.67   | 130,836.02          |
| 1953             | 68,000   | 68,308.05   | 46,458.90   | 114,766.95   | 134,562.38          |
| 195 <del>4</del> | 61,000   | 61,518.63   | 38,082.20   | 99,600.83    | 132,280.63          |
| 1953             | 75,000   | 75,370.10   | 59,394.86   | 134,764.96   | 166,772.60          |
| 1956             | 75,000   | 75,370.10   | 60,237.30   | 135,607.40   | 168,337.25          |

### RETURN ON INVESTMENTS

| Year                                                                           | Bonds                                                                                                                                                                              | Stocks                                                                                                                                                  | Total                                                                                                                                     | Rate of<br>Return<br>on Cost                                                                                  |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 1925 • 1930 1933 1935 • 1940 1942 1945 1948 1950 1951 1952 1953 1954 1955 1956 | \$1,350.00<br>1,695.21<br>1,679.49<br>1,022.96<br>1,037.56<br>1,306.49<br>1,479.99<br>1,194.85<br>1,117.50<br>1,026.30<br>1,117.84<br>1,435.12<br>1,621.06<br>1,750.16<br>1,770.00 | \$ 108.57<br>680.70<br>2,182.46<br>2,186.17<br>2,488.85<br>2,944.31<br>3,860.39<br>4,607.67<br>3,681.53<br>3,587.45<br>2,961.75<br>3,002.50<br>3,336.94 | \$1,350.00* 1,695.21 1,788.06 1,703.66 3,220.02 3,492.66 3,968.84 4,139.16 4,977.89 5,633.97 4,799.37 5,022.59 4,582.81 4,752.66 5,106.94 | 5.22%<br>4.84<br>3.92<br>5.06<br>5.28<br>4.71<br>5.06<br>5.85<br>6.05<br>4.75<br>4.36<br>4.58<br>3.53<br>3.76 |

<sup>\*</sup> Estimated income for year.

Firancial Condition. No significant changes have occurred in the past year in either assets or liabilities.

Cash and receivables are large enough to take care of current outlay; prepaid expenses and inventories are slightly less than last year; furniture (extra typewriters and equipment for a larger staff) slightly more. To take advantage of stock purchase rights, some \$840 new money has been invested in securities. Some odd number of rights have been sold and \$5,244 have been taken out in interest and dividends.

Accounts payable are normal for this period of the year and deferred income slightly larger on account of increased number of members and subscribers added to our rolls. The membership extension fund, which had its origin after World War I, has been exhausted. Either a new promotion ex-

pense account should be set up or such expenses should henceforth be charged to current expenses.

Only the Committee on Research and Publications has a small unexpended appropriation left (\$502). We have a \$500 contingent liability to William Jaffe which should perhaps be carried on the balance sheet (see minutes, March, 1955). Life membership commitments are increasing. Unappropriated surplus has been increased by the amount of net income, \$738, to \$122,936. Total footings amount to \$150,000.

The report of the Finance Committee lists our present holdings of stocks and bonds. The above tables show for selected dates the composition of the investment portfolio together with the rates of return. On the basis of cost, the return was 3.76 per cent and on the market, 3.03 per cent.

Respectfully submitted,

JAMES WASHINGTON BELL, Treasurer

### REPORT OF THE FINANCE COMMITTEE

December 5, 1956

Executive Committee, American Economic Association, Evenston, Illinois.

### GENTLEMEN:

The accompanying tables show the list of investment holdings of the Association as of the end of the fiscal year, November 30, 1956, and changes made since our last report. Cost and approximate market value are shown. As in previous valuations, the \$8,000 U.S. Treasury 2¾'s have been valued as though they had been converted into U.S. Treasury Notes due October 1, 1957.

LIST OF SECURITIES HELD BY THE ASSOCIATION
Stocks

| Number<br>of Shares<br>of<br>Common<br>Stock                                                  | Issue                                                                                                                                                                                                                                                                                                                                                                              | •  | Cost                                                                                                                                                                             | pproximate<br>Market<br>Value<br>11/30/56                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 100<br>100<br>200<br>204<br>100<br>100<br>104<br>200<br>102<br>66<br>100<br>100<br>137<br>220 | Aluminum Co. of America. American Trust Co. (San Francisco) Central and South West Corp. Columbia Broadcasting System (B.) Eastern Air Lines. First National Bank of Chicago. Gulf Interstate Gas Co. (6% pfd.) Gulf Oil Corp. Houston Lighting & Power Co. Monsanto Chemical Co. Peoples Gas Light & Coke Co. Pure Oil Co. Schering Corp. Socony Vacuum Oil Co. Sperry Rand Corp. |    | 2,133.08<br>4,261.13<br>2,801.69<br>5,758.85<br>2,774.10<br>3,070.00<br>6,240.00<br>2,684.99<br>1,961.53<br>4,625.44<br>8,306.15<br>4,361.98<br>3,356.98<br>3,292.72<br>4,608.66 | \$<br>9,375.00<br>4,110.00<br>7,175.00<br>5,967.00<br>4,700.00<br>3,090.00<br>6,262.50<br>10,868.00<br>10,200.00<br>3,659.25<br>10,230.00<br>4,612.50<br>4,550.00<br>6,987.00<br>4,840.00 |
|                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                    | \$ | 60,237.30                                                                                                                                                                        | \$<br>96,626.25                                                                                                                                                                           |

### Bonds

| Par<br>Amount                                           | Issue                                                                                                                                                                                                                                                                                     | Cost                                                                                                                    | Approximate<br>Market<br>11/30/56                                                                                      |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| \$20,000<br>5,000<br>8,000<br>7,000<br>15,000<br>20,000 | U.S. Treasury Notes, 1½%, Series "A-1959," due 2/15/59 U.S. Treasury Bonds, 2½%, due 11/15/61 U.S. Treasury Bonds, 2½%, Series "B," due 1975/80 U.S. Treasury Bonds, 2½%, due 12/15/72-67 U.S. Treasury Bonds, 2½%, due 12/15/58 U.S. Treasury Bonds, 2½%, due 8/15/63 Bonds Stocks Total | \$ 20,003.00<br>5,000.00<br>8,000.00<br>7,275.63<br>15,000.00<br>20,091.47<br>\$ 75,370.10<br>60,237.30<br>\$135,607.40 | \$.19,320.00<br>4,713.00<br>8,184.00<br>6,249.00<br>14,595.00<br>18,650.00<br>\$71,711.00<br>96,626.25<br>\$168,337.25 |

The proportions of stock and bond holdings this year and last are shown in the following table.

|                 | 1955                |          |                     |          |                     | 19           | 56                  |              |
|-----------------|---------------------|----------|---------------------|----------|---------------------|--------------|---------------------|--------------|
|                 | Cost                | %        | Market              | %        | Cost                | %            | Market              | %            |
| Stocks<br>Bonds | \$ 59,395<br>75,370 | 44<br>56 | \$ 93,589<br>73,184 | 56<br>44 | \$ 60,237<br>75,370 | 44.4<br>55.6 | \$ 96,626<br>71,711 | 57.3<br>42.7 |
| Total           | \$134,765           | 100      | \$166,773           | 100      | \$125,607           | 100.0        | \$168,337           | 100.0        |

It will be noted that the slight change in proportion of stocks and bonds in 1956 resulted from a decline in the market value of the bonds and an increase in the value of the stocks.

No changes were made this year in bond holdings. A few shifts were made in stocks in order to adjust our holdings to a changing market situation. The following table shows sales and purchases made during the year.

Summary of Securities Purchased and Sold Year Ended November 30, 1956

| Shares<br>or Par<br>Value | Issue                                                                                  | Cost                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Selling<br>Price                    | Gain<br>or<br><i>Loss</i>      |
|---------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------|
| 220<br>100<br>200         | Sold Household Finance Corp Phillips Incandesent Lamp Works British Petroleum Co., Ltd | \$ 4,190.23<br>3,900.96<br>3,139.76                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | \$ 5,467.08<br>3,143.34<br>3,007.01 | \$1,276.85<br>757.62<br>132.75 |
|                           |                                                                                        | \$11,230.95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | \$11,617.43                         | \$ 386.48                      |
| 20<br>100<br>100<br>100   | Bought Sperry Rand Corp American Trust Co Pure Oil Co First National Bank of Chicago   | \$ \(\pm\) \(\p |                                     |                                |

In order to take advantage of stock rights, some \$400 new money was added to the account. Otherwise changes in capital values were unaffected. As may be noted in the table comparing figures for 1935 and 1956, the cost of our holdings is only \$840 more this year than last and in terms of market value \$1,565 more. The market decline in U.S. securities has been more than offset by appreciation in the price of stocks held.

Respectfully submitted,

ROY C. OSGOOD, Chairman C. Wells Farnham James Washington Bell

### REPORT OF THE AUDITOR

December 15, 1956

Executive Committee American Economic Association Evanston, Illinois

### DEAR SIRS:

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In accordance with instructions we have examined the accounts and related records of the American Economic Association for the year ended November 30, 1956 and now submit our report thereon together with the following exhibits:

| Statement of Financial Position—November 30, 1956       | Exhibit 1 |
|---------------------------------------------------------|-----------|
| Statement of Income and Expense for Year Ended November |           |
| 30, 1956                                                | Exhibit 2 |

### Results from Operations

Net income for the year ended November 30, 1956 was \$738 compared with net income of \$11,503 for the year ended November 30, 1955 as shown in the following summary:

| Particulars                                 |                 | Ended<br>aber 30 | · T                  |
|---------------------------------------------|-----------------|------------------|----------------------|
| Fatticulars                                 | 1955            | 1956             | Increase<br>Decrease |
| Income: •                                   |                 |                  |                      |
| Dues                                        | \$43,556        | \$47,646         | \$ 4,090<br>323      |
| Profit on sale of securities (net)          | 4,535<br>11,621 | 4,858<br>386     | 11,235               |
| Miscellaneous income                        | 104             | 78               | 26                   |
| Total income                                | \$59,816        | \$52,968         | \$ 6,848             |
| Expense:                                    |                 |                  |                      |
| Publication expense                         | \$52,053        | \$54,478         | \$ 2,425             |
| Less—Publication income                     | 26,936          | 31,888           | 4,952                |
| Net publication expense                     | \$25,117        | \$22,590         | \$ 2,527             |
| Administrative and other operating expenses | 23,196          | 29,640           | 6,444                |
| Total expense                               | \$48,313        | \$52,230         | \$ 3,917             |
| AT 4.1                                      |                 |                  | 4                    |
| Net income                                  | \$11,503        | \$ 738           | \$10,765             |
|                                             |                 |                  |                      |

The increase in dues reflects the increase in membership as reported by the Secretary:

| Classification | Number of<br>at Nove |       |
|----------------|----------------------|-------|
| •              | 1933                 | 1930  |
| Regular        | 6,922                | 7,634 |
| Junior         | 363                  | 533   |
| Family         | 122                  | 129   |
| Life           | 74                   | 78    |
| Honorary       | 18                   | 18    |
| Complimentary  | 56                   | 58    |
| • ,            | •                    |       |
| Total          | 7,555                | 8,450 |
|                | ****                 |       |

interest on bonds owned was accounted for in accordance with stated rates; dividends received on stocks were compared with amounts reported in published records of dividends paid.

Net publication expense, as shown in the following summary, amounted to \$22,590 for the current year compared with \$25,117 for the preceding year:

| Particulars                       |             | Ended<br>aber 30<br>1956 | Budgetary<br>Estimates for<br>Year 1956 |
|-----------------------------------|-------------|--------------------------|-----------------------------------------|
| Expenses:                         | 1933        | 1990                     | 1ear 1930                               |
| Printing of—                      |             |                          | •                                       |
| Review                            | 325,822     | \$28,164                 | \$26,300                                |
| Handbook                          | 540         | 479                      |                                         |
| Proceedings                       | 12,900      | 12,116                   | marrow (b)                              |
| Editor's honorarium               | 3,500       | 4,417                    | 3,500                                   |
| Payments to contributors          | 2,422       | 2,427                    | 2,500                                   |
| Editorial clerical salaries       | 6,931       | 7,112                    | 6,800                                   |
| Editorial supplies and expense    | 784         | 646                      | 765                                     |
| Sundry publication expense (net)  | 846         | <i>883</i>               |                                         |
| Total expenses                    | \$52,053    | \$54,478                 | = - <del></del>                         |
| Less—Income:                      | · · · · · · |                          |                                         |
| Subscriptions, other than members | \$17 387    | \$17,852                 | •                                       |
| Sales of copies                   | 2,532       | 2,908                    |                                         |
| Advertising                       | 7,017       | 11,128                   |                                         |
| Total income                      | \$26,936    | \$31,888                 |                                         |
|                                   |             |                          | •                                       |
| Net publication expense           | \$25,117    | \$22,590                 |                                         |
| •                                 |             |                          | •                                       |

The decrease of \$2,527 in net publication expense (from \$25,117 to \$22,590) represents:

| Increase in subscriptions. Increase in copy sales. Increase in advertising. | \$ 465<br>376<br>4,111 |
|-----------------------------------------------------------------------------|------------------------|
| Less—Increase in expenses (net)                                             |                        |
| Net decrease                                                                | \$2,527                |

Billings for the December, 1956, issue of the *Review* and reprints had not been made by the publishers at the time of our examination. The publishers estimated the cost of the *Review* printing and reprints at \$7,432; this amount is included in the year's expenses.

### Financial Position

Condensed statements of financial position of the Association at November 30, 1955, and 1956 are compared below:

| • •                                                                             |                                     | nber 30                           | Increase                      |
|---------------------------------------------------------------------------------|-------------------------------------|-----------------------------------|-------------------------------|
| Assets                                                                          | 1955                                | 1956                              | Decrease                      |
| Cash on deposit and on hand                                                     | \$ 6.891<br>3.953<br>1,082<br>1,718 | \$ 5,997<br>5,668<br>841<br>1,894 | \$ 894<br>1,715<br>241<br>176 |
| Bonds. Stocks.                                                                  | 75,370<br>59,395                    | 75,370<br>60,237                  | 842                           |
|                                                                                 | \$148,409                           | \$150,007                         | \$ 1,598                      |
| Liabilities, Funds and Surplus                                                  |                                     |                                   |                               |
| Accounts payable.  Deferred income.  Sundry fund.                               | \$ 8,604<br>8,418<br>38             | \$ 8,154<br>9,750<br>65           | \$ 450<br>1,332<br>27         |
| Membership extension fund                                                       | 369                                 | _                                 | 369                           |
| Fund for committee on publication and research.  Life memberships               | 882<br>7,900                        | 502<br>8,600                      | <i>380</i><br>700             |
| Balance at beginning of year Net income for year Transfers from life membership | 110,170<br>11,503<br>525            | 122,198<br>738<br>—               | 12,028<br>10,765<br>525       |
| •                                                                               | \$143,409                           | \$150,007                         | \$ 1,598                      |

Cash on deposit was satisfactorily reconciled with balances confirmed directly to us by the depositories.

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The receivables of the Association were not confirmed by correspondence with debtors. Based upon the Association's past experience the reserve for doubtful accounts appears to be adequate to cover normal losses.

Changes in the investment account were verified by the examination of broker's invoices and other supporting data. Securities held at November 30, 1956, were confirmed directly to us by the State Bank and Trust Company of Evanston, Illinois, custodian for the Association, or by Blunt, Ellis and Simmons, stock brokers, who were holding purchased shares in process of transfer at November 30, 1956.

Insofar as we are able to ascertain, all liabilities of the Association at November 30, 1956, are reflected in the accompanying statement of financial position, and the Secretary has represented to us that to the best of his knowledge all liabilities are disclosed.

A summary of the transactions in the various funds is presented below:

| Particulars                                          | Membership<br>Extension<br>Fund | Committee on<br>Publication<br>and Research | Sundry<br>Fund |
|------------------------------------------------------|---------------------------------|---------------------------------------------|----------------|
| Balance, November 30, 1955  Changes during the year— | \$369.36                        | \$881.59                                    | \$37.73        |
| ReceivedExpended                                     | 359.3¢                          | 500.00<br>879.55                            | 44.25<br>17.25 |
| Balance, November 30, 1956                           | \$ -                            | \$502.04                                    | \$64.73        |

We express our appreciation of the courtesies and co-operation extended to our representatives during the course of the examination.

Very truly yours,

DAVID HIMMELBLAU & Co. Certified Public Accountants

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# STATEMENT OF FINANCIAL POSITION-NOVEMBER 30, 1956 AMERICAN ECONOMIC ASSOCIATION

| Assets:                                                                                         |                                           |       |                   | Liabilities, Funds and Surplus CURRENT LIABILITIES:     | 83         |              |
|-------------------------------------------------------------------------------------------------|-------------------------------------------|-------|-------------------|---------------------------------------------------------|------------|--------------|
| Cash on deposit and on hand—State Bank and Trust Company, Ev-                                   | 707 04                                    |       |                   | Accounts payable                                        |            | \$ 8,153.96  |
| Commerce of Chicago                                                                             | 4,637.81<br>1,309.33<br>50.00             | e9-   | 5,997.14          | •                                                       | ;          |              |
| eceivables— Review advertising Accrued interest and dividends Publication sales Membership dues | \$ 4,074.70<br>619.76<br>758.97<br>460.05 |       | ·                 | Prepaid dues\$7                                         | 7,632.88   | 9,749.88     |
| doubtful accounts                                                                               | \$ 5,913.48 246.03                        | ıv    | 5,667.45          | FUNDS: Committee on Publication and Research \$ Sundry. | 502.04     | 566.77       |
| Inventory of stamps and envelopes<br>Unexpired insurance                                        |                                           |       | 597.27<br>243.46  |                                                         |            |              |
| Total current assets                                                                            |                                           | \$ 12 | \$ 12,505.32      | T was Management of the Comments                        |            |              |
|                                                                                                 | \$75,370.10                               |       | 135,607.40        | Life Membershires and Sukrius:  Life membrablip         | 8,600.00   |              |
| FURNITURE AND FIXTURES: (less accumulated depreciation)                                         |                                           | 1     | 1,894.05          | r year<br>iber 30, 737.82                               | 122,936.16 | 131,536.16   |
|                                                                                                 |                                           | \$150 | \$150,006.77      | Total liabilities, funds and surplus                    |            | \$150,006.77 |
| Executive Committee,<br>American Economic Association:                                          | on:                                       |       | Auditor's Opinion | Эрихгом                                                 |            |              |

In our opinion, the accompanying financial statements present fairly the financial position of the American Economic Association at November 30, 1956, and the results of its operations for the year ended that date, in conformity with generally accepted accounting principles applied on a basis consignent with that of the preceding year. Our examination was made in accordance with generally auditing standards and included such tests of the accounting records and other auditing procedures as we considered necessary in the circumstances.

Chicago, Illinots December 15, 1956

DAVID HIMMELBLAD & Co. Certified Public Accountants

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### EXHIBIT 2

### AMERICAN ECONOMIC ASSOCIATION STATEMENT OF INCOME AND EXPENSE FOR THE YEAR ENDED NOVEMBER 30, 1956

| ¥€ | FOR THE YEAR ENDED NOV.                              | EMBER 30, 193                           | 00                                      |             |
|----|------------------------------------------------------|-----------------------------------------|-----------------------------------------|-------------|
| 1  | Particulars                                          |                                         | Amount                                  |             |
|    | Income:                                              |                                         | ~                                       |             |
|    | Dues— Regular, junior and family members             |                                         | \$45,797.71                             |             |
|    | Subscribing and contributing members                 |                                         |                                         | \$47,645.71 |
|    |                                                      | ,                                       |                                         |             |
|    | Investments— Interest on bonds                       | \$ 1,770.00                             |                                         |             |
|    | Dividends                                            | 3,336.94                                |                                         |             |
|    | ,                                                    |                                         |                                         |             |
|    |                                                      | \$ 5,106.94                             | 4 4 0 7 7 40                            |             |
|    | Less—Custodian fees                                  | 249.45                                  | \$ 4,857.49                             |             |
|    | Gain on sale of securities (net)                     |                                         | 386.48                                  | 5,243.97    |
|    | Miscellaneous income                                 |                                         |                                         | 78.07       |
| X  | Total income                                         |                                         |                                         | \$52,967.75 |
|    | Expense:                                             |                                         |                                         | •           |
|    | Administrative and other operating expense—          |                                         |                                         |             |
|    | Secretary's salary                                   | \$ 4,416.68                             | •                                       | *           |
|    | Office salaries                                      | 18,623.38                               |                                         |             |
|    | Annual meeting (net)                                 | 1,860.69<br>1,425.66                    |                                         |             |
|    | Other committee expenses                             | 800.73                                  |                                         |             |
| _  | Postage                                              | 1,384.65                                |                                         |             |
| •  | Stationery and supplies                              | 1,543.52                                |                                         |             |
|    | Insurance Provision for depreciation                 | 170.21<br>223.72                        |                                         |             |
| •  | Telephone and telegraph.                             | 540.52                                  |                                         |             |
|    | Dues and expenses—                                   |                                         |                                         |             |
|    | American Council of Learned Societies                | 191.09                                  | •                                       |             |
|    | International Economic Association                   | 400.00<br>477.14                        |                                         |             |
|    | Social security taxes                                | 317.50                                  |                                         |             |
|    | Miscellaneous expense (net)                          |                                         | \$29,640.07                             |             |
|    |                                                      |                                         | •                                       |             |
| 1  | Publication expenses—                                | - M.                                    | •                                       |             |
|    | Printing of: **Review**                              | \$28,163.98                             | •                                       |             |
| •  | Proceedings                                          | 12,115.97                               |                                         |             |
|    | Directory and handbook                               | 479.16                                  |                                         |             |
|    | Editor's honorarium                                  | 4,416.68                                |                                         | •           |
|    | Payments to contributors Editorial clerical salaries | 2,427.50<br>7,112.01                    |                                         |             |
|    | Editorial supplies and expense                       | 645.91                                  |                                         |             |
|    | Sundry publishing expenses (net)                     | 883.17                                  |                                         |             |
| -  | Total publishing expense                             | \$54,478.04                             | ÷                                       |             |
|    | Less—Publication income:                             | ė                                       |                                         |             |
|    | Subscriptions, other than members                    | ·                                       |                                         | -           |
|    | Sales of copies                                      |                                         |                                         |             |
|    | Advertising                                          | 31,888.18                               | 22,589.86                               |             |
|    | Total expense                                        | • • • • • • • • • • • • • • • • • • • • | .:                                      | . 52,229.93 |
| -  | NET INCOME FOR YEAR ENDED NOVEMBER 30, 1956          | (Exhibit 1).                            | • • • • • • • • • • • • • • • • • • • • | \$ 737.82   |
|    |                                                      |                                         |                                         |             |

# REPORT OF THE MANAGING EDITOR FOR THE YEAR ENDING DECEMBER 1956

The flow of manuscripts submitted to the *Review* has continued at about the same high level as in 1955—a little higher than in preceding years. The percentage of manuscripts published in 1956 to the number submitted in that year was slightly higher than in the year before, but not significantly so. Table 1 gives comparative figures with regard to manuscripts submitted for the past six years.

TABLE 1
MANUSCRIPTS SUBMITTED 1950-56

| •                               | 1956             | 1955             | 1954             | 1953              | 1952             | 1951             | 1950             |
|---------------------------------|------------------|------------------|------------------|-------------------|------------------|------------------|------------------|
| Manuscripts received            | 242<br>153<br>89 | 245<br>149<br>96 | 231<br>160<br>71 | 234<br>122<br>112 | 190<br>133<br>57 | 222<br>157<br>65 | 197<br>156<br>41 |
| Percentage of articles accepted | , 18             | 17               | 18               | 15                | 21               | 19               | 19               |

Table 2 provides the break-down of the volume's contents as between articles, review articles, communications, book reviews, etc. The amount of space devoted to leading articles has decreased slightly, and the amount devoted to review articles has increased by about a corresponding amount. The review articles are clearly appreciated by many of our readers, and the increased space devoted to them in both of the last two volumes also reflects the fact that there happen to have appeared in this period several more books

TABLE 2
SUMMARY OF CONTENTS, 1954-56

|                                                                                        | 19        | 56                                       | ·: 19         | 55                                   | 19                  | 54                                  |
|----------------------------------------------------------------------------------------|-----------|------------------------------------------|---------------|--------------------------------------|---------------------|-------------------------------------|
|                                                                                        | No        | Pages                                    | No.           | Pages                                | No.                 | Pages                               |
| Leading articles                                                                       | 21 7      | 425<br>86                                | 21<br>6       | 446<br>67                            | 27<br>3             | 448<br>33                           |
| Communications: Original Comments and replies Book reviews Memorials                   | 14<br>178 | 16<br>51<br>311                          | 5<br>9<br>173 | 31<br>34<br>311                      | 6<br>11<br>159<br>1 | 37<br>42<br>301<br>2                |
| Classified lists: New books Periodical articles Dissertations Notes Graduate offerings |           | 57<br>65<br>30<br>45<br>—<br>—<br>1,086* |               | 52<br>56<br>25<br>39<br>12<br>1,073* | · · ·               | 57<br>53<br>27<br>38<br>—<br>1,038* |

<sup>\*</sup> Plus some blank pages

than usual that seemed to merit extended treatment. At the same time, the space devoted to regular book reviews has not been contracted; in fact the number has actually been increased. Taking review articles and regular book reviews together, there were 185 reviews or about 36.5 per cent of the volume.

We have continued our effort to provide adequate review coverage of foreign books in particular, permitting the size of the volume to increase moderately so that other reviews might not be slighted. The space devoted to book reviews and review articles was 397 pages in 1956 as against 378 in 1955 and 334 in 1954. Exclusive of British and Canadian books and of foreign books reprinted in the United States, we have carried reviews of 44 foreign books in 1956 as compared with 40 in 1955 and 22 in 1954; and these reviews of foreign books aggregated 114 pages in 1956, as against 83 in 1955 and 40 in 1954. Part of this particular increase, however, was due to the fact that three of the foreign-book reviews this past year happened to be review articles.

Table 3 summarizes the subject-matter distribution of articles, review articles, and communications for the past five years, also showing the 1956 distribution in parentheses. It is of interest to observe the subject-matter distribution over a longer period than one year since in any one volume there may well be more than the normal concentration of papers in some of the special fields.

| •                                                                                                                                                                                                                                                                                                           | Articles                                                           | Review<br>Articles                                                                                                          | Original<br>Commu-<br>nications | Com-<br>ments;<br>Replies | Totals                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| General economics<br>Price and allocation theory<br>Income and employment the-                                                                                                                                                                                                                              | 7 (2) ·<br>14 (1)                                                  | 1 (1)<br>2 (1)                                                                                                              | 2<br>4                          | 14 (1)                    | 10 (3)<br>34 (3)                                                                                                                 |
| History of economic thought. Economic development. Social accounting Economic systems Business fluctuations. Money and banking. Public finance. International economics. Business finance Business organization Industrial organization Land economics. Labor economics. Population; welfare. Unclassified. | 1<br>2<br>6(2)<br>9(1)<br>20(4)<br>1<br>2(1)<br>3<br>6(1)<br>11(2) | 4 (2;<br>3<br>2 (1;<br>3 (1;<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>— | 8 (3) 2                         | 14 (2) 2 2 (2)            | 42 (12)<br>9 (1)<br>12 (4)<br>6 (1)<br>1<br>5<br>12 (4)<br>17 (4)<br>29 (4)<br>1<br>2 (1)<br>14<br>8 (3)<br>20 (4)<br>5<br>8 (4) |
|                                                                                                                                                                                                                                                                                                             | 111 (21)                                                           | 20 (7)                                                                                                                      | 34 (6)                          | 70 (14)                   | 235 (48)                                                                                                                         |

Note: The 1952-56 figure is followed in each case by the 1956 figure in parentheses.

The subject-matter distribution of the review articles essentially reflects the distribution of new books appearing during the period that seemed to the

Managing Editor to merit extended reviews. The subject-matter distribution of the comments and replies is mainly related to the more or less accidental factor of the extent to which different articles were controversial. The most interesting distribution is therefore that of leading articles plus original communications. The ten fields showing the highest concentration of contributions for the five-year period in order by number of papers is as follows: International Economics (24), Income and Employment Theory (24), Price and Allocation Theory (18), Labor Economics (13), Money and Banking (10), Public Finance (10), Economic Development (8), Land Economics (6), Industrial Organization (5), History of Economic Thought (4). General Economics (6), not included in this list, contained 2 methodological discussions and 7 contributions broader in nature than the scope of any one of the listed fields.

In the interpretation of these figures it should be kept in mind that articles classified under price and allocation theory or income and employment theory are by no means exclusively theoretical in nature. For example, Kessel's and Gordon's essentially empirical articles, in the March and June, 1956, issues, respectively, were classified under the latter heading. And in several of the other fields that are sometimes referred to as "applied," such as public finance and money and banking, theoretical articles will also be found. The classification is not based on methods but on subject matter.

I have the impression that the rather heavy concentration of articles and original communications in the fields of international economics, price and allocation theory, income and employment theory, and labor economics reflects a roughly corresponding subject-matter distribution of manuscripts received. It would be hazardous, however, to draw the conclusion that these are the areas in which the most active research is going on. More important, probably, is the fact that in the case of the first three of these areas there are no journals which specialize exclusively in any one of the fields, while in the case of several of the more specialized fields there do exist similarly specialized journals.

In interpreting Table 3 it should be kept in mind that we do not follow the practice of commissioning articles, except in the case of review articles. Hence in the main the distribution of articles and original communications by fields reflects essentially the judgment of the Board as to which manuscripts submitted, regardless of field, have been most worthy of publication. I have not hesitated, for example, to accept two or even three articles of merit in the same subject-matter field for publication in the same issue. It has seemed desirable to place quality and significance of contribution ahead of distribution by subject matter as criteria for selection.

Other criteria have been employed, however, to a limited extent. For example, we have tended to hold down the amount of space devoted to methodological discussions and to articles on the history of economic thought relative to the number of manuscripts submitted in these areas. More important, we have felt it advisable to impose some editorial limits on the publication of articles making substantial use of mathematical techniques.

For the Review, as well as the other general economics periodicals, this has been a difficult problem. Many readers no doubt regard any mathematics at all as excessive, while some of the younger economists probably feel that we have moved too slowly in opening the Review to articles employing mathematical tools and to econometric contributions.

The policy we have followed during these five years is essentially a compromise. We do not accept many manuscripts that depend heavily upon mathematical analysis. (In 1955, only 70 pages of articles and communications, plus a 6-page mathematical appendix, out of 578 pages involved more than a trivial amount of mathematics; in 1956, 78 pages of articles and communications, plus 9½ pages of mathematical appendixes out of the same total of 578 pages.) We also require that the mathematics should not be advanced, and we do our best to induce authors to make clear, for nonmathematical readers, the implications of the mathematical sections of the analysis. We do not accept articles using mathematics if the analysis can be developed as effectively without it. In this difficult period of transition in which many economists do not have much competence in mathematical reasoning, while others are well equipped in this regard and like to use it, some sort of compromise is desirable particularly in a journal with as varied readers as the Review's, including economists and noneconomists of widely differing backgrounds and interests. On the other hand, however, I think it would be a great mistake to close the pages of the official journal of the Association to any one type of economic research, whether it be mathematical, institutional, theoretical, or statistical.

Table 4 presents the actual expenditures in 1956 in comparison with the estimated budget and with actual expenditures in 1955. Actual expenditures exceeded budgeted expenditures by about \$3,000. Nearly two-thirds of this amount is accounted for by higher printing costs than anticipated, the other

TABLE 4 ACTUAL AND BUDGETED EXPENDITURES

|                                                                                      | Budget<br>1956        | Actual<br>1956                                             | Actual ·<br>1955                                           |
|--------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------|------------------------------------------------------------|
| Printing and mailing. Editor's salary. Editorial assistance. Supplies. Contributors. | 3,500<br>6,800<br>765 | \$28,172.00*<br>4,500.00<br>7,112.01<br>680.93<br>2,427.50 | \$26,538.56†<br>3,500.00<br>6,881.65<br>763.22<br>2,422.00 |
|                                                                                      | •\$39,865             | \$42,892.44                                                | \$40,105.43                                                |

Printing estimate December number, \$7,200.
 † Corrected from 1955 Annual Report.

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one-third by an increase in the salary of the managing editor. Table 5 gives detailed information about printing costs by quarters. Part of the increase in 1956 is due to a larger number of copies printed, and part to the slightly larger

volume (gross pages, 1,292 as compared with 1,272 in 1955). Since we are on notice that printing costs will increase about 10 per cent in 1957, it will be necessary to budget accordingly.

| •         | TA           | BLE 5  |       |          |
|-----------|--------------|--------|-------|----------|
| COPIES PE | RINTED, SIZE | AND CO | ST OF | PRINTING |

| `     | Copies                               | Paş                               | ges                               | Cost Including                                                             |  |
|-------|--------------------------------------|-----------------------------------|-----------------------------------|----------------------------------------------------------------------------|--|
| 1     | Printed                              | Net                               | Gross                             | Reprints                                                                   |  |
| March | 11,200<br>11,300<br>11,700<br>12,000 | 279<br>257<br>295<br>255<br>1,086 | 336<br>296<br>340<br>320<br>1,292 | \$ 7,186.71<br>6,214.60<br>7,570.69<br>7,200.00 (estimated)<br>\$28,172.00 |  |

The estimated costs for the coming year are presented in Table 6, based on a volume of 1,270 pages, including advertising (or about 1,060 pages of text), and taking into account the anticipated increase in printing costs.

TABLE 6
RECOMMENDED BUDGET FOR 1957

| Printing (including paper, postage, reprints, etc. connected with publica | -        |
|---------------------------------------------------------------------------|----------|
| tion)                                                                     | \$31,000 |
| Editor's salary                                                           | 4,500    |
| Editorial assistance                                                      | 7,100    |
| Editorial assistance Supplies.                                            | 2 500    |
|                                                                           | 2,300    |
|                                                                           | \$45.850 |
|                                                                           |          |

During the year I have had the advice and assistance of the following foreign correspondents—who have been particularly helpful with regard to the selection of foreign books for listing and review:

| Isaac Kerstenetzky (Brazil)    | Giovanni Demaria (Italy)     |
|--------------------------------|------------------------------|
| Jean-Marcel Jeanneney (France) | Victor L. Urquidi (Mexico)   |
| Erich Schneider (Germany)      | P. J. Verdoorn (Netherlands) |
| Erik Lindal                    | ıl (Sweden)                  |

Two members of the Board of Editors complete their three-year terms of office at this time: Gardner Ackley and George H. Hildebrand. I wish to express my appreciation of the great service they have rendered the *Review* and the Association by providing highly competent and judicious appraisals of manuscripts and helping in the formulation of general editorial policy. In accordance with the policy earlier adopted of expanding the membership of the Board to eight, I should like to nominate for three-year appointments beginning in 1957: Neil W. Chamberlain, Evsey D. Domar, and Thomas Schelling.

During the year I have frequently sought the aid of members of the profession in addition to the hard-working members of the Editorial Board-

partly to relieve the latter of what would otherwise be an impossibly heavy burden and partly to obtain advice of specialists in particular areas not represented on the Board. The following have assisted in this way:

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| W. Fellner              | A. G. Papandreou                                                                                                                                                                              |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| M. Friedman             | S. Peterson                                                                                                                                                                                   |
| A. G. Gruchy            |                                                                                                                                                                                               |
| R. W. Harbeson          | P. Samuelson                                                                                                                                                                                  |
| M. Hastay               |                                                                                                                                                                                               |
| R. B. Heflebower        | I. Scott                                                                                                                                                                                      |
| H. S. Houthakker        | O. E. Sette                                                                                                                                                                                   |
| W. Isard                | R. Solow                                                                                                                                                                                      |
| S. Kuznets              | J. J. Spengler                                                                                                                                                                                |
| F. Machlup              |                                                                                                                                                                                               |
| J. Margolis             | G. Tintner                                                                                                                                                                                    |
| J. W. Markham           | W. S. Vickrey                                                                                                                                                                                 |
| J. N. Morgan            | J. F. Weston                                                                                                                                                                                  |
| W. H. Nicholls          | H. F. Williamson                                                                                                                                                                              |
| R. Nurkse               | ,                                                                                                                                                                                             |
| Respectfully submitted, |                                                                                                                                                                                               |
|                         | W. Fellner M. Friedman A. G. Gruchy R. W. Harbeson M. Hastay R. B. Heflebower H. S. Houthakker W. Isard S. Kuznets F. Machlup J. Margolis J. W. Markham J. N. Morgan W. H. Nicholls R. Nurkse |

B. F. HALEY, Managing Editor

### REPORT OF THE COMMITTEE ON RESEARCH AND PUBLICATIONS

• A major activity of the Committee during the past year has been the consideration of a cumulative index of English-language economic journals. At the request of the Executive Committee at its spring meeting, this Committee undertook a detailed study of the cost of such an index on the assumption that the project would cover various time periods and various numbers of journals. It is anticipated that the Committee's recommendations for action will be reported to the Executive Committee in March.

Arrangements have been made for the preparation of three additional volumes of readings as follows: "Public Finance," Professors Musgrave and Shoup; "Industrial Organization and Public Policy," Professors Heflebower and Stocking; "Economic Development," Professors Bruton and Millikan.

The first draft of a summary of available bibliographies in economics was reviewed by the Committee and is now being revised for publication. The possibility of the preparation of a translation of Pareto's *Manuale* in cooperation with the Royal Economic Society is under further discussion.

Respectfully submitted,

JOHN PERRY MILLER, Chairman

# REPORT OF THE COMMITTEE ON ECONOMIC EDUCATION DECEMBER 27, 1956

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During the year 1956, the work of this Committee was made up largely of the individual activities of its individual members. There were no meetings of the full Committee, but the members were in touch with each other by correspondence and, in some instances, personally. The Chairman met with each of the other members at least once.

Formal Committee action involved the planning of the session on "Economics in the Schools" scheduled for December 29 at the Annual Meetings in Cleveland, and the notification of a number of educational organizations and journals of the establishment by the Association of the Committee on Economic Education as a standing committee and of the reasons which led to this action. Members of the Committee also participated in the formulation of question seven in the questionnaire sent by Secretary Bell to the members of the Association, and the Committee expects to make use of the results when they become available.

All of the members of the Committee were active as individuals throughout the year in promoting extension and improvement in economics in the schools. Most of this work took place, directly or indirectly, through the agency of the Joint Council on Economic Education. The Council has done extremely valuable work in the field of economics in the schools—through publications, workshops, local and regional councils, experimental programs involving teams of economists and educators in teacher-training institutions, and conferences—and members of the Committee have participated extensively in this work. Thus far, Committee members have taken pains not to identify the Association officially with the Joint Council, but we believe that the time has arrived for a formal affiliation of the Association with the Council to be established. We will bring in a recommendation to this effect at the next meeting of the Executive Committee.

The task ahead in the area of economics in the schools is vast, but encouraging signs are becoming apparent. It is noteworthy that the movement is now beginning to center its efforts at the pre-service teacher-training level; and that more than ever before educators and economists are working together. A strong movement is clearly under way; it has purpose, form, and energy. Economists are beginning to participate. They should be active in far greater numbers, and they should be nearer to the front.

Respectfully submitted,

BEN W. LEWIS. Chairman

# REPORT OF THE COMMITTEE ON ECONOMIC EDUCATION DECEMBER 29, 1956

- The Committee recommends:
- 1. The membership on the Committee be increased from five to six, the members to serve for three-year terms with the possibility of reappointment, the terms of two members to expire each year.
- 2. The Association to accept the invitation to recommend to the nominating committee of the Joint Council on Economic Education three members of the Association to serve as representatives of the Association on the Board of Trustees of the Joint Council on Economic Education. Each person so named will serve on the Board of the Council for a three-year term, one term expiring each year. The Committee on Economic Education will suggest nominees to the President of the Association who will make recommendations to the nominating committee of the Joint Council.

BEN W. LEWIS, Chairman

### REPORT OF THE COMMITTEE ON HONORS AND AWARDS

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The Committee on Honors and Awards has had no occasion to be active since the December, 1955, meeting, prior to which it submitted a report and recommendation for the award of the Clark medal in December, 1955.

Neither the Clark nor the Walker medal is scheduled for award in 1956. During 1957, however, the Committee will need again to be active in order to submit recommendations for consideration by the Executive Committee for both awards at the end of 1957.

Respectfully submitted,
NORMAN S. BUCHANAN, Chairman

# REPORT OF OUR REPRESENTATIVE TO THE SOCIAL SCIENCE RESEARCH COUNCIL

\*The social Science Research Council continues to be active in a number of areas of interest to the economist, and several new projects, which will also be of interest, have been initiated. In June, 1956, a new Committee on Analysis of Economic Census Data was appointed, with John P. Miller as Chairman, to arrange for analytic treatment of economic census data in co-operation with the Bureau of the Census. Such a committee was proposed by a conference of economists held in April, which had been called together by the earlier Committee on Census Monographs. As a result of meetings held in September and October, the new Committee has proposed four topics for monographic treatment: (1) a study of the industrial boundaries and concepts underlying current census classifications (in relation to actual characteristics of particular industries) in order to determine their validity in economic research, (2) survey of the data on companies collected in 1954 in order to assess their usefulness in economic analysis and to suggest ways of improving future censuses, (3) examination of existing industrial data from the point of view of their relevance for studies of industrial concentration and mergers, and (4) analysis of differential growth in manufacturing by areas. Other possible topics are also being explored, and the Committee welcomes suggestions from those interested in the more effective use of the source material provided by the economic censuses.

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Also on the statistical side, the SSRC has established a committee, under the chairmanship of G. H. Evans, to advise the Bureau of the Census on the preparation of a successor to the widely used *Historical Statistics of the United States*, originally published in 1949. A committee of the SSRC had played an important role in the preparation of the earlier volume. The new compilation will include contributions by private scholars as well as by the staff of the Census Bureau. Arrangements are being made for a thorough review of the contents of the present volume. The intent is not merely to bring the series now included up to date but to include additional series, to cover earlier periods on particular topics where estimates are possible, to attempt to tie together where possible previously disconnected series, and so on. Actual compilation is expected to begin in 1957, and it is hoped that publication may be possible in 1959.

The Committee on Economic Growth continues to be active. New conferences have been planned on the choice of technology in economic development and on commitment of the industrial labor force in the process of industrialization. A conference on the state and economic growth was held in October of this year, and a group met last summer at Dartmouth in an interuniversity research seminar on theories of economic growth. In addition, two studies have recently been commissioned: one appraising sociological theories relating to economic development and another analyzing the national

income accounts of selected underdeveloped countries. The Committee has also extended further its arrangements for studies that will go on in other countries.

The Committee on Labor Market Research, which had continued active since 1943, has, on its own recommendation, been succeeded by a new Committee on Employment Relationships and the Family. The new Committee will "plan research on family employment patterns in relation to the structure and functioning of the labor market and to family income and expenditure patterns." This change is an interesting reflection of research developments and new interests in this general area that have come about in recent years.

The program of summer institutes and seminars continues to be an important part of the Council's activities. Among those held in the summer of 1956, the one on theories of economic growth has already been mentioned. A research training institute on quantitative research methods in agricultural economics was held at North Carolina State College. Economists will be interested in all of the institutes being planned for the summer of 1957. There will be one on organization theory and research at Carnegie Institute of Technology, under the direction of Herbert Simon. Another, on research on credit and monetary policy, will be held in Washington, with the Board of Governors of the Federal Reserve System as co-sponsor. In addition, there will be two institutes on mathematics in the social sciences. One will deal with applications, with separate workshops concerned with different areas. Robert Dorfman will direct one workshop on linear economic models and Lienel McKenzie will direct another on applications of mathematics in international trade and finance. The other institute, co-sponsored by the Matheflatical Association of America, will be for college teachers of mathematics and is aimed at the better adaptation of undergraduate mathematics courses to the needs of students in the social sciences.

Unfortunately, the program of undergraduate research fellowships has been terminated, since the supporting financial grant was not renewed. During the four years of the program, 211 undergraduates were given small research grants (13 in economics), and the program seems to have been successful in stimulating able young students and providing early training for research careers. The other fellowship and grants-in-aid programs of the Council have continued to serve a valuable purpose, and some new ones in special areas have been added. The grants-in-aid program plays an important role in supporting small-scale research by the individual scholar, particularly in those institutions lacking substantial research funds of their own. This program has now been enlarged to provide a limited number of grants of from \$1,500 to \$6,000 for mature social scientists whose independent research requires support for periods of a year or less. A large number of applications continue to be received for the research training fellowships, post- and predoctoral. Thirteen of the 43 awards this past year were offered to applicants in economics.

## REPORT OF OUR REPRESENTATIVE TO THE NATIONAL BUREAU OF ECONOMIC RESEARCH

Personnel. Professor John H. Williams represented the American Economic Association on the Board of Directors of the National Bureau of Economic Research from February 1, 1954, to May 31, 1956. He served with distinction and upon his resignation, the Executive Committee formally expressed its appreciation for his services and its regrets that he could not continue as a member of the Board.

On December 1, 1956, Professor Gottfried Haberler, Director by Appointment of Harvard University, was elected Chairman of the Board, to succeed Mr. Harry Scherman.

As of the same date, Professor Arthur F. Burns, Director by Appointment of Columbia University, was elected President, to succeed Professor Haberler. In addition to serving as President, Professor Burns will continue as a member of the research staff and will resume his studies of economic change and will embark on certain new studies of economic policy for stabilization and growth. Professor Burns was originally appointed to the Bureau's staff in 1930. In 1945, he had been appointed Director of Research, taking a leave of absence in 1953 to serve as Chairman of the Council of Economic Advisers. His return to the Bureau is a source of great satisfaction to the staff and to the Board of Directors.

Research Program. This last year has been an extremely productive one for the National Bureau. The various reports published during the year and presently in press are listed in the appendix, as well as a list of the studies in advanced stages of preparation which have been previously reported. The following brief statements describe the new studies which were started or extended into new areas during 1956.

Organization and Structure of American Business. This program of research is directed to developing and analyzing the facts and relationships basic to an understanding of the structure of business organization. To develop the needed basic facts the National Bureau is helping the Bureau of the Census to compile a new body of statistical data on an enterprise (company) basis. The data are being developed from the 1954 economic censuses—manufacturing, mining, trade, and other businesses—and from Statistics of Income as compiled by the Internal Revenue Service.

In the past only limited data on the structure of business have been available for making policy decisions and conclusions have been drawn that could not be supported by the facts. The program that is now being started will provide a basis for a better understanding of the structure, efficiency, and flexibility of industry in a private enterprise economy; for judging the validity of many beliefs that have grown up about the economy; and for making more enlightened public and private policies.

Quality of Credit in Booms and Depressions. As a result of the widespread public discussion of the problems of credit quality and the possibility that

boom times may bring a relaxation of credit standards that will intensify the problem of subsequent readjustment, a study of the quality of credit in booms and depressions has been started. Its objective is to consider and, to the extent possible, to devise a system of current reporting on the quality of credit. Such a study, it is believed, will dispel much of the current speculative discussion and provide a basis for informed public opinion and appropriate private and public policy decisions.

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Application of Electronic Computers to Analysis of Economic Statistics. This project is exploring ways in which electronic computers can be applied to the analysis of current business statistics, with reference to the analysis of the current business situation and the historical analysis of business fluctuations. The objective is to take a step towards determining some of the practical benefits that economists and statisticians can realize from the use of high-speed computing machines.

These explorations, as referred to in the National Bureau's 35th Annual Report, grow out of earlier efforts in 1954 and 1955 under the direction of Geoffrey H. Moore and Millard Hastay to develop a method of adjusting monthly economic series for seasonal variations, for which machine and programming time on an IBM 701 was provided by International Business Machines Corporation. Participation by the Corporation in the further application of electronic computers is now being planned.

Julius Shiskin, on leave from his position as Chief Economic Statistician of the Bureau of the Census, and Geoffrey H. Moore are jointly directing the work of the National Bureau in this field. Mr. Shiskin is a recipient of a Rockefeller Public Service Award and is spending the current academic year at the National Bureau. The Sperry-Rand Corporation is co-operating with the National Bureau and providing Univac machine and programming time. The work is being supported, also, by a grant from the National Science Foundation. An Advisory Committee of distinguished statisticians and mathematicians has been appointed to suggest new projects, review procedures, and otherwise aid in developing the program.

The Quality and Significance of Anticipations Data. One of the newest and most rapidly growing fields of economic statistics consists of data on anticipations of individuals, business firms, and governments. The widespread interest in them derives primarily from the possibility that knowledge of these intentions, if properly interpreted, may provide a basis for forecasting future economic activity and contribute in a fundamental way to our understanding of economic behavior.

To consider problems and issues involved in the development of expectational economics, a conference under the auspices of the Universities-National Bureau Committee for Economic Research is being planned. It will be devoted to increasing knowledge that will be useful in appraising the overall economic outlook and in considering appropriate economic measures. Attention will be given to the plans, programs, and expectations of consumers, business, and government, with a view to increasing knowledge that will be useful in appraising the over-all economic outlook and in considering appropriate economic policy measures.

Review of the National Income Accounts. At the request of the Bureau of the Budget, the National Bureau began in November a review of the National Income Accounts and closely related accounts now being prepared or requiring preparation by the federal government with a view to making recommendations concerning needed improvements and additions for more effective analysis.

The objective of the review is to provide a thorough examination and evaluation of the National Income Accounts and related accounts and to devise a program to effect further improvements in the Accounts when feasible. The review is to ascertain what reorientation in concept and statistical procedure is required in the Accounts in order that they may serve government and private users most effectively.

New projects on which research associates are working, and the associates appointed for 1956-57, are:

Kenneth A. H. Buckley (University of Saskatchewan), Economic Growth and Capital Formation

Douglass C. North (University of Washington), Regional Aspects of American Economic Growth

Julius Shiskin (U.S. Bureau of the Census), Application of Electronic Computers to Analysis of Economic Statistics

Universities-National Bureau Committee for Economic Research. The ninth Special Conference under the sponsorship of the Universities-National Bureau Committee for Economic Research was held in April, 1956, and was devoted to international economics. The tenth Special Conference, to be held in 1957, will be devoted to the quality and economic significance of anticipations data.

The 1956 Annual Meeting of the Conference on Research in Income and Wealth was held in March, 1956, and was devoted to an appraisal of the 1950 census income statistics.

Respectfully submitted,

WILLARD L. THORP

### Appendix

### Reports Published in 1956

Policies to Combat Depression (Special Conference Series No. 7), by a Special Conference of the Universities-National Bureau Committee for Economic Research (January, 1956)

Personal Income during Business Cycles, by Daniel Creamer (January, 1956)

Interest as a Source of Personal Income and Tax Revenue (Occasional Paper 51), by Lawrence H. Seltzer (Merch, 1956)

Urban Mortgage Lending: Comparative Markets and Experience, by J. E. Morton (March, 1956)

Basic Research and the Analysis of Current Business Conditions (36th Annual Report), by Solomon Fabricant (May, 1956)

Consumption and Business Fluctuations: A Case Study of the Shoe, Leather, Hide Sequence, by Ruth P. Mack (June, 1956)

Resource and Output Trends in the United States since 1870 (Occasional Paper 52), by Moses Abramovitz (June, 1956)

The Pattern of Financial Asset Ownership: Wisconsin Individuals, 1949, by Thomas R. Atkinson (September, 1956)

Trends in Employment in the Service Industries, by George J. Stigler (September, 1956)

Fiscal-Year Reporting for Corporate Income Tax (Technical Paper 11), by W. L. Crum (October, 1956)

Productivity Trends: Capital and Labor (Occasional Paper 53), by John W. Kendrick (October, 1956)

Capital Formation in Residential Real Estate: Trends and Prospects, by Leo Grebler, David M. Blank, and Louis Winnick (November, 1956).

## Reports in Press, December 31, 1956

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Problems of Capital Formation: Concepts, Measurement, and Controlling Factors (Studies in Income and Wealtz, Volume 19)

The Growth of Public Employment in Great Britain, by Moses Abramovitz and Vera Eliasberg

Measurement and Behavior of Unemployment, by a Special Conference of the Universities-National Bureau Committee for Economic Research Problems in the International Comparison of Economic Accounts (Studies in Income and Wealth, Volume 20)

Patterns of Farm Financial Structure: A Cross-Section View of Economic and Physical Determinants, by Donald C. Horton

Concentration in Canadian Manufacturing Industries, by Gideon Rosenbluth

Regional Income (Studies in Income and Wealth, Volume 21)

A Theory of the Consumption Function, by Milton Friedman

Demand and Supply of Scientific Personnel, by George J. Stigler and David M. Blank

Financial Intermediaries in the Saving and Investment Process in the American Economy, 1900-52, by Raymond W. Goldsmith

Federal Lending and Loan Insurance, by E. J. Saulnier, Neil H. Jacoby, and Harold G. Halcrow.

Problems of Consumer Credit Controls (Special Conference)
Bank Stock Prices and the Bank Capital Problem, by David Durand

Reports Approved for Publication and Soon to Go to Press

Corporate Bond Characteristics and Investor Experience, by W. Braddock Hickman

The Differential Tax Burden on Stockholders, by Daniel M. Holland Wages in Germany, 1871-1945, by Gerhard Bry

The Labor Force under Changing Income and Employment, by Clarence D. Long

International Financial Transactions and Business Cycles, by Oskar Morgenstern

Suggestions for Research in the Economics of Pensions
Capital Formation and Financing in Agriculture, 1870-1950, by Alvin S.
Tostlebe

# REPORT OF OUR REPRESENTATIVE TO THE AMERICAN COUNCIL OF LEARNED SOCIETIES

The most definite item to report is attendance as delegate at the annual meeting-along with Secretary Bell. (The activities of the Conference of Secretaries of the constituent societies are perhaps more tangible than those of the Council itself, particularly from the standpoint of the major social science associations.) The meeting was held at the usual season in late January (Thursday and Friday, the 24th and 25th, to be exact) and, in 1957, at the Roosevelt and Delmonico Hotels in New York City. The occasion was one of enjoyment and considerable profit to those in attendance, but its spirit and substance can hardly be conveyed to others in a brief report. A source of much gratification was the announcement that the Council has received a veritable "new lease on life" through gifts of over three million dollars from two foundations, for practically unrestricted use over the next five years. This new support will enable it to operate somewhat effectively in the functions for which it exists: the promotion of scholarship in this country and participation in that of other countries, particularly as organized under UNESCO and the International Union of Academies. In the past few years, meager support has compelled the Council to be chiefly occupied with keeping alive, planning for better days, and doing innumerable tasks which might individually be described as "chores," though in the aggregate they are important and some are so in themselves. The announcement should be good news to all who are interested in scholarship, in the humanities and the social sciences in their humanistic aspects, and in the standing of American scholarship in the eyes of the world.

Announcement was made of a decision to move the headquarters of the Council from Washington to New York, probably still maintaining an office in Washington; also of some changes in its charter, now in the form of bylaws, including a change in the name of its head from Executive Director to President. Also that the Executive Director, Dr. Mortimer Graves, during the recent troubled years, has been given the recognition of a leave of absence on full salary for his last year before retirement. The dinner meeting on Thursday evening was devoted to expressions of appreciation for his services, as Assistant Director and then as Director, over a long period of years. The new President is to be Dr. Frederick Burkhardt, now President of Bennington College, who has been a member of the Board of Directors of the Council and otherwise active in its affairs of for some years.

The meeting of 1957 continued the precedent set in 1956 of devoting a full day with the evening to a carefully organized discussion of a chosen topic, on the basis of prepared papers circulated prior to the meeting among those who had elected to participate in one or another of three panels dealing with divisions or aspects of the general subject. In 1956 the over-all topic was appraisal of the eighteenth century and what has survived of value under the conditions of today. The present year it was "Individualism in Asia and the

West." The undersigned participated in a panel on "Government Under Law." of which Professor Milton Katz, of the Harvard Law School, was chairman and leader. The discussion centered on a comparison of different historical and present legal systems, including the Anglo-American and the Continental European, especially with respect to the likelihood that the Moslem and communistic systems may in the future adopt something akin to Western ideas of legal order in society. The prepared papers were highly informative and the discussion enlightening. Corridor conversation indicated the same for the other two panels. Their subjects were "Economic Growth and the Individual" and "Individualism: East and West," and the chairmen were E. E. Hagen, Professor of Economics at Massachusetts Institute of Technology. and Morton White, Professor of Philosophy at Harvard University. The meeting on Friday evening was a public one, with numerous invited guests, held in the Grand Ball Room of the Roosevelt. It was devoted to a summary of what had been presented in the six panel sessions of the day by their chairmen and rapporteurs, after a short introductory address by the Chairman of the Council, Professor Howard M. Jones.

One of the activities of the Council in the year closing was preparation of the papers and a full report of the discussions of the meeting of 1956, by Dr. Roger P. McCutcheon, and its publication by the Council in a booklet of eighty-six pages under the title, The Present-Day Relevance of Eighteenth-Century Thought. The same author also published as an article in the Harvard Library Bulletin (Autumn, 1956) an extended report on the 1956 Panel on Aesthetics, with valuable critical comments.

Besides preparing for and conducting the annual meeting and other items already mentioned, the officers and staff of the Council have accomplished during the year an impressive amount and variety of work. And this in spite of the serious interruption and very considerable labor of moving the Washington office, due to expiration of its lease and demolition of the building previously occupied, at 1219 16th Street, N.W. (The new quarters are at 2103 R Street, N.W.) Three issues of the recently established ACLS News Letter were published and distributed to a large and carefully selected mailing list and one issue of the Bulletin containing the Proceedings of the 1956 Annual Meeting, with reports of the numerous committees through which the work of the Council is largely done. The latter also contained a carefully worked out survey of the present situation and prospects of humanistic scholarship as affecting the needs and opportunities confronted by the Council. A sixteen-page mimeographed "Summary of Activities During 1956" was distributed at the meeting, to Council members and the Secretaries of its constituent societies. Only a perusal of these several statements could give an idea of the volume and variety of tasks for which the organization is called upon or which it finds to do or lead to an appreciation of the importance of its work. A summary is impossible and any selection largely arbitrary; but many of the activities ought to be known as widely as possible by the public with an interest in the continuation and advance of our culture. Under grants, totaling at least \$500,000 (apart from "free funds") from foundations and other donors, the Council or its agents has continued work on such important projects as: current digest of the Soviet press; participation in the Commission for the Humanities (which held a Conference in 1956, discussing six vital subjects in as many sessions); Dictionary of American Biography (second supplementary volume about to go to press, a "concise" one-volume edition project); summer school in linguistics (study of); Asiatic languages and teaching English to foreigners; Slavic studies; history of religions; Encyclopedia of Islam; and many others.

Much staff time has also been devoted to attending meetings and conferences and co-operating or keeping in touch with numerous organizations engaged in similar or related activities.

The undersigned has now served as a delegate of the AEA to the ACLS for nearly two decades. He is constantly more impressed with the importance of the Council's work and with the ever increasing range of activities needing to be carried on which it is the logical agency for undertaking, initiating, or giving general direction, if it could secure the necessary financial and human resources. The cause it exists to promote is that of "scholarship" (in this country, vaguely but essentially distinguished from "science") in the fields of the languages and literatures of the civilized world, culture history, comparison and criticism, and those of the disciplines dealing with man and society, but on the cultural side. The existence and importance of this cultural side of the subject matter of the social sciences fully justifies the continued connection of the national associations, such as the AEA, with this Council, more primarily concerned with the humanities as narrowly understood in academic parlance. For study of this aspect of human life and social relationships tends to be neglected, calling as it does for concepts and methods differing considerably from those of science in the meaning of the natural sciences, which concepts and methods are applicable without too much modification to other features, more amenable to objective and precise description, and especially to measurement. Some observations current at the January meeting indicate that the ACLS, in the prospective expansion of its activities, will make a more determined effort to deal with the "social humanities" the awkward term that was used.

Scholarship, in this wide range, is an essential element in civilized life, and its quality is one by which any nation is judged among the nations and by history. Moreover, it rapidly becomes more vital in the narrowest practical sense. As world affairs grow rapidly in complexity and importance and this country is forced to be more intimately involved in them, knowledge of the great world cultures and its widest possible diffusion among our educated classes which must furnish national leadership becomes rather fearsomely imperative. That the need cannot be at all adequately met is the more reason for doing the most that can be done. This will call for great changes in our education, elementary and advanced, and for the creation of a vast amount of "apparatus"—reference works, histories, and especially translations. To produce these tools will require a higher order of ability and long and arduous study and training on the part of selected individuals. But such activities have little glamor, and as things are, they offer wholly inadequate material rewards as incentives or necessary conditions. The crucial require-

ment is, of course, "brains," but that depends also on money. The field of scholarship has always—notably under American conditions—had to meet especially strong competition from more material pursuits. Recently its position has been further weakened by the prestige of science and the drive—admittedly under strong pressure of need—for drawing the best minds into that field, a drive backed up by vast funds from government and from private enterprise. Much of the needed product of scholarly scholarship cannot hope to pay for itself on a commercial basis. There is a crying need for more people with knowledge and insight—and with means—to be awakened to the impossibility of continuing the relatively self-contained and spiritually parochial life inevitable under the conditions of our earlier history. The country must produce a public alive to the requirements in the way of "learning" if it is to take the place it is practically compelled to take in the world of today and of the visible future.

An organization such as the ACLS can do little toward the much needed co-ordination of disciplines and approaches, toward overcoming the tendency to excessive specialization, and reducing the competitive spirit in favor of a more co-operative one.

Respectfully submitted,

FRANK H. KNIGHT

# REPORT OF AMERICAN ECONOMIC ASSOCIATION DELEGATES TO THE INTERNATIONAL ECONOMIC ASSOCIATION

The chief event since the last report, made to the Executive Committee of the AEA in March, 1956, was the First Congress of the IEA held in Rome, September 6-11, 1956, devoted to the theme "Stability and Progress." Unlike the small round table meetings of experts, the Congress was designed for wide participation and factors of inspiration, friendship, international good will, and the like. Evaluations of the Congress by participants seemed generally favorable and attendance, which approached three hundred, exceeded expectations. It is not, however, planned to arrange such congresses in less than about five-year intervals.

From July 6 to September 7, 1956, the IEA conducted a refresher course at the University of Malaya (Singapore) for economists from Southeast Asia. Lectures were delivered by Sir Sydney Caine (at that time Vice-Chancellor of the University of Malaya), Professor Harry G. Johnson (Manchester), Mr. Dudley Seers (Oxford), Professor T. H. Silcook (Malaya, who organized the course), Professor J. J. Spengler (Duke), and economists from Southeast Asia. Twenty-seven students participated, coming from Burma, Indonesia, Malaya, Philippines, and Thailand. The refresher course was followed by a conference of heads-of university economics departments and research institutions in Southeast Asia, including fourteen persons, at the same location, September 7-12.

Since the last report, additional numbers of International Economic Papers have been published, as well as the volume on Monopoly and Its Regulation, edited by E. H. Chamberlin, reporting the round table held at Talloires. Volumes embodying the proceedings of the round table held at Seelisberg in September, 1954, on Wage Determination, edited by John T. Dunlop, and the round table held at Kitzbühel in September, 1955, on The Economics of Migration, edited by Brinley Thomas, are nearing publication.

A round table planned for next summer in the Near East has had to be abandoned because of the political tensions of this area; and the conduct of small study groups, under the caption of "peaceful co-operation," with economists from Eastern European countries has been left to UNESCO.

During the late summer and early autumn of 1957 the International Economic Association will conduct two round table conferences. From August 19 to 28 a conference devoted to the economic development of Latin America, with especial attention to the theoretical aspects of capital formation and international trade, will be held at Rio de Janeiro. Thirty-five participants from North and South America (including also one from France and one from India) will present and discuss sixteen papers. The committee in charge is composed of Howard S. Ellis (Chairman), and Henry Wallich (United States), Eugenio Gudin (Brazil), and Javier Marquez (Mexico).

From September 11 to 18, a round table will take place at Lisbon on the "Economic Consequences of the Size of Nations," organized by the Treasurer

of the IEA, Professor E. A. G. Robinson, of Cambridge University. The theme is an outgrowth of a general enquiry into the significance of the size of nations, from political, economic, social, and other angles, instituted by the Social Science Council of UNESCO.

Including Poland, the most recently admitted member, the IEA now represents an organization of twenty-seven national societies. The Association of Soviet Economic Teaching Institutions has recently applied for membership.

At the third meeting of the Council at Rome (which takes place every third year) the following were elected members of the Executive Committee: Erik Lindahl (Sweden), President; Louis Baudin (France), Vice-President; Austin Robinson (England), Treasurer; Howard S. Ellis (United States); Eugenio Gudin (Brazil); Walther Hoffmann (Germany); Walter Joehr (Switzerland); Ichiro Nakayama (Japan); C. N. Vakil (India). The Secretary of the IEA is Mme. Helene Berger-Lieser, at 7, rue de Miromesnil, Paris 8, the central office of the Association.

Respectfully submitted,

HOWARD S. ELLIS GOTTFRIED HABERLER

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The American Economic Review, March, June, September, and December; each, Supplement.—Fiftieth Annual Meeting:

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Volume XXX, 1940

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Supplement No. 2-Handbook of the Association, 1940.

No. 5 (February, 1941)

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